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Volatile Organic Compound Emission Inventory for Non-Attainment Areas in Louisiana

TRW Environmental Engineering Div., Vienna, VA

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1201 Elm Street
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16. ABSTRACT

This project includes the development of a volatile organic compound emission inventory for 17 non-attainment parishes in Air Quality Control Region (AQCR) 106 and 2 non-attainment parishes in AQCR 022. The New Orleans and Baton Rouge metropolitan areas are located in AQCR 106 and the Shreveport metropolitan area is located in AQCR 022. The inventories were compiled in accordance with the methodology described in Procedures for the Preparation of Emission Inventories for Volatile Organic Compounds (EPA 450/2-77-028). The inventories consist of emissions from stationary point sources, stationary area sources, and mobile sources. Stationary point sources account most of the emissions in the Baton Rouge area. Emissions are more evenly distributed between the three categories in the New Orleans area, and mobile source emissions are predominant in the Shreveport area. The volatile organic compound emission inventory represents calendar year 1977.

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FOR
NON-ATTAINMENT AREAS IN LOUISIANA

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SECTION 1

INTRODUCTION

An emission inventory of volatile organic compounds (VOC) has been compiled for nineteen parishes in the State of Louisiana. These parishes are located in areas which are presently not attaining the National Ambient Air Quality Standard for photochemical oxidants. Under the requirements of the 1977 Clean Air Act Amendments a revised State Implementation Plan (SIP) is required for non-attainment areas, and must contain a current emission inventory. The SIP must be submitted to the Environmental Protection Agency no later than January 1, 1979 and be approved by July 1, 1979. This emission inventory has included sources in each of the three following major categories: stationary point sources, stationary area sources, and mobile sources. The compilation of the inventory has been in accordance with EPA approved procedures.

SECTION 2

SUMMARY

This emission inventory was compiled by the Environmental Engineering Division of TRW Inc. for the U. S. Environmental Protection Agency's Region 6 Office. The purpose of this inventory is to provide the State of Louisiana with the necessary information on volatile organic compound (VOC) emissions to develop and implement an effective control strategy for photochemical oxidants. A total of nineteen parishes have been included in the inventory; seventeen in the Southern Louisiana - Southeast Texas air quality control region, and two in the Shreveport - Texarkana - Tyler air quality control region. These parishes are located in areas presently not attaining the National Ambient Air Quality Standard (NAAQS) for photochemical oxidants. Under the requirements of the 1977 Clean Air Act Amendments, a revised State Implementation Plan (SIP) is required for those portions of the state not attaining the standards. As part of the revised SIP, a current emission inventory is required.

This inventory was compiled in accordance with the methodology described in Procedures for the Preparation of Emission Inventories for Volatile Organic Compounds.[1] The three major categories for which emissions were compiled are stationary point sources, stationary area sources, and mobile sources. The total emissions from these three sources for each parish is presented in Table 2-1. The remaining sections of this report describe the background to the study, the methodology used in compiling the inventory, and a presentation of the emissions from each subcategory for each of the nineteen parishes included in the study.

TABLE 2-1. SUMMARY OF 1977 VOC EMISSIONS (TONS/YEAR) BY SOURCE CATEGORY(a)

PARISH	STATIONARY SOURCES	AREA SOURCES	MOBILE SOURCES	TOTAL
SOUTHERN LOUISIANA - S.E. TEXAS AQCR				
ASCENSION	11,482.2 (72)	964.0 (6)	3,607.7 (22)	16,053.9
BEAUREGARD	470.5 (14)	933.1 (28)	1,895.8 (58)	3,299.4
CALCASIEU	34,936.0 (75)	3,910.7 (8)	7,999.5 (17)	46,846.2
EAST BATON ROUGE	47,337.4 (61)	10,711.8 (14)	19,954.9 (25)	78,004.1
GRANT	476.5 (21)	274.6 (13)	1,470.4 (66)	2,221.5
IBERVILLE	5,649.5 (65)	737.2 (8)	2,330.6 (27)	8,717.3
JEFFERSON	22,256.2 (52)	6,430.3 (15)	13,848.3 (33)	42,534.8
LAFAYETTE	1.2 (0)	2,452.0 (31)	5,340.5 (69)	7,793.7
LAFOURCHE	1.7 (0)	1,317.6 (24)	4,068.0 (76)	5,387.3
ORLEANS	1,724.9 (5)	12,279.4 (40)	16,983.1 (55)	30,987.4
POINTE COUPEE	8.7 (1)	361.9 (19)	1,545.6 (80)	1,916.2
ST. BERNARD	13,364.3 (72)	1,699.7 (9)	3,556.5 (19)	18,620.5
ST. CHARLES	37,482.8 (91)	757.5 (2)	2,825.4 (7)	41,065.7
ST. JAMES	3,980.7 (69)	478.9 (8)	1,322.9 (23)	5,782.5
ST. JOHN THE BAPTIST	5,889.0 (67)	486.1 (5)	2,475.6 (28)	8,850.7
ST. MARY	12,827.6 (72)	1,667.8 (9)	3,345.4 (19)	17,840.8
WEST BATON ROUGE	3,823.4 (46)	1,283.9 (15)	3,302.8 (39)	8,410.1
SHREVEPORT-TEXARKANA-TYLER AQCR				
BOSSIER	349.4 (5)	1,480.1 (21)	5,324.0 (74)	7,153.5
CADDO	2,173.3 (8)	7,295.8 (28)	16,583.1 (64)	26,052.2

(a) The number in parentheses signifies the percentage that each source category contributes to the total parish VOC emissions.

SECTION 3

BACKGROUND FOR EMISSION INVENTORY

3.1 CLEAN AIR ACT

Under the mandate of the 1970 Clean Air Act, the U. S. Environmental Protection Agency (EPA) promulgated primary and secondary National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants.[2] Each state and territory was then required to submit to the Administrator of the EPA a plan for implementation, maintenance and enforcement of the air quality standards in each air quality control region (AQCR) within the state. Also included in the plans were attainment dates for the air quality standards in each AQCR. In those states that did not meet their attainment date, a revised State Implementation Plan (SIP) was required which demonstrated attainment of the standards. The Clean Air Act Amendments of 1977 retained the fundamental approach to air pollution control and also retained the State Implementation Plan as the mechanism for implementing this approach. Under the 1977 amendments, each state is required to submit to the EPA Administrator a list of air quality control regions which have attained standards, those which have not attained standards, and those for which there is insufficient data for classification.

For the air quality control regions not attaining the standards, the respective states must submit a revised SIP by January 1, 1979, which demonstrates attainment of the standards as expeditiously as practicable, but not later than December 31, 1982. For photochemical oxidants and carbon monoxide, an extension to 1987 is available if the state demonstrates that attainment by 1982 is not possible with reasonably available control measures. Since there are some non-attainment areas for photochemical oxidants in Louisiana, a revised SIP will be required. The 1977 Amendments specify that the revised SIP include a comprehensive, accurate, current inventory of actual emissions from all sources. To satisfy this requirement, an inventory of volatile organic compound (VOC) emissions has been compiled for nineteen parishes in Louisiana. Since volatile organic compounds are precursors to the formation of photochemical oxidants in the atmosphere, the sources of VOC emissions must be determined before an effective control strategy can be developed and implemented.

3.2 DEFINITION OF STUDY AREA

There are two air quality control regions in Louisiana which are presently not attaining the standard for photochemical oxidants; the Southern Louisiana - Southeast Texas AQCR (No. 106), and Shreveport - Texarkana - Tyler AQCR (No. 22). There are seventeen parishes in AQCR 106 that were included on the non-attainment portion of the AQCR which are listed in Table 3-1. In December, 1977, the State of Louisiana submitted a revision to the SIP which included only eleven parishes as the non-attainment portion of the AQCR. The control strategy included in this revision was based on air quality data for 1975. More recent air quality data have resulted in the addition of six parishes to the non-attainment area. In the Shreveport - Texarkana - Tyler AQCR, a monitoring program for photochemical oxidants conducted during the summer of 1977 indicated that the air quality standard was being violated, therefore, Bossier and Caddo parishes have been designated as a non-attainment area.

TABLE 3-1. PARISHES INCLUDED IN EMISSION INVENTORY FOR THE SOUTHERN LOUISIANA - SOUTHEAST TEXAS AQCR

ASCENSION
BEAUREGARD
CALCASIEU
EAST BATON ROUGE
GRANT
IBERVILLE
JEFFERSON
LAFAYETTE
LAFOURCHE
ORLEANS
POINTE COUPEE
ST. BERNARD
ST. CHARLES
ST. JAMES
ST. JOHN THE BAPTIST
ST. MARY
WEST BATON ROUGE

SECTION 4

METHODOLOGY

This section describes the general approach and methodology that was utilized in compiling the volatile organic compound emission inventory for the study areas in Louisiana. The specific techniques and assumptions used in determining the emissions are presented for each source category.

4.1 GENERAL APPROACH TO STUDY

The data presented in this document are the result of utilizing several techniques for collecting and analyzing information dealing with the operation of sources that are known and potential emitters of volatile organic compounds. For the most part, the procedures followed in preparing this inventory are based on a recent EPA publication, Procedures for the Preparation of Emission Inventories for Volatile Organic Compounds.[1] In a few cases it was found that the procedures recommended in this document were either not applicable to a particular source category, or that the information needed to compile the emissions was unavailable. In these cases, either a modified or revised procedure was utilized which is described in the following sections which discuss each of the emission source categories. The baseline year for the emissions presented in this document is 1977.

In determining which compounds to exempt from the emission inventory, the EPA recommended policy on control of volatile organic compounds described in the Federal Register of July 8, 1977, was followed.[3] The compounds listed in Table 4-1 were not included in the inventory, and, therefore, are exempt from future regulation as stated by the EPA policy. The compounds listed in Table 4-2 are of low photochemical reactivity, but do contribute to oxidant formation during periods of multiday stagnations and were, therefore, included in the inventory.

TABLE 4-1. VOLATILE ORGANIC COMPOUNDS EXEMPT FROM REGULATION UNDER STATE IMPLEMENTATION PLANS

METHANE
ETHANE
1, 1, 1 - TRICHLOROETHANE (METHYL CHLOROFORM)
TRICHLOROTRIFLUOROETHANE (FREON 113)

TABLE 4-2. VOLATILE ORGANIC COMPOUNDS OF LOW REACTIVITY

PROPANE	TERTIARY ALKYL ALCOHOLS
ACETONE	METHYL ACETATE
METHYL ETHYL KETONE	PHENYL ACETATE
METHANOL	ETHYL AMINES
ISOPROPANOL	ACETYLENE
METHYL BENZOATE	N, N - DIMETHYL FORMAMIDE

The emission calculations presented in this inventory are based on emission factors found in the most recent issue of AP-42, Compilation of Air Pollution Emission Factors.[4] In a few cases, emission factors were not available in this document, therefore, other sources were used which are described in the following sections. A specific example is the Mobile Source Emission Model developed by EPA, which was used to obtain the emission factors for highway motor vehicles.[5]

The emission factors presented in AP-42 are for the most part for total hydrocarbons, rather than for volatile organic hydrocarbons. In order to determine the reactive fraction of the total hydrocarbon emission, a reactivity factor was utilized. The reactivity factors for motor vehicles were obtained from the EPA Model, while for most of the remaining sources a recent TRW study sponsored by EPA was utilized.[6] The Monitoring and Data Analysis Division of the EPA Office of Air Quality Planning and Standards was contacted to determine if hydrocarbon reactivity factors for stationary sources were available, and since none were, this report was utilized. The reactivity factors vary for each source category as explained in the following sections which describe the specific methodology utilized in compiling the emission inventory.

4.2 STATIONARY AND MOBILE SOURCE EMISSIONS

4.2.1 Stationary Point Source Emissions

Volatile organic compound emissions have been compiled for both stationary point and area sources. Point sources are usually defined as having a specified level of emissions such as greater than 100 tons per year. These sources also have individual records of plant operations including data on emissions.

The emission data for all point sources in the study area were obtained from the Emission Inventory Questionnaire (EIQ) which each point source in Louisiana is required to submit to the Louisiana Air Control Commission. The EIQ's separately list all organic and inorganic gaseous emissions from the source. All gaseous emissions were assumed to be photochemically reactive, with the exception of the compounds previously listed in Table 4-1. In those cases where a distinction between reactive and non-reactive hydrocarbon emissions were not made in the EIQ, the reactive emissions were calculated based on the raw materials used by the source. The emission data contained in the EIQ's were used for the baseline year 1977 although not all of the EIQ's were submitted during 1977. Any EIQ's submitted during prior years were assumed to be representative of 1977 emissions since each source is required to submit an updated EIQ any time there is a change in emission levels.

In calculating emissions from point sources, a basic assumption was made regarding the reactivity of hydrocarbon emissions. Emissions from all fuel combustion sources such as industrial and power plant boilers were assumed to be all methane on the basis of a previous TRW report and since AP-42 lists a negligible amount of hydrocarbon emissions for fuel combustion.[7]

4.2.2 Stationary Area Source Emissions

Those sources which are either too small or too numerous to be inventoried on an individual basis are termed "area sources," and their emissions are aggregated for the total source category. A total of eleven categories of area sources have been included in this emission inventory and are described in the following subsections. Excluded from this inventory are emissions from commercial and residential space heating for the reasons discussed earlier regarding fuel combustion.

4.2.2.1 Service Station Gasoline Handling

Service station gasoline handling emissions involve losses incurred during the filling of underground storage tanks, underground tank breathing, and filling of automobile tanks. Emission estimates for all facets are based upon the amount of gasoline handled per year for each parish involved in the inventory. These data were obtained from the Louisiana Department of Revenue and Taxation for 1971 through 1975. Data for 1976 and 1977, however, were available only as state totals, therefore gasoline sales for these years were apportioned to the parish level on the basis of the percentages prevalent throughout the 1971 through 1975 time period. The emission factors utilized are as follows:

Filling underground tanks	11.5 lb/10^3 gal.
Underground tank breathing	1.0 lb/10^3 gal.
Vehicle refueling	9.0 lb/10^3 gal.
Spillage	0.7 lb/10^3 gal.

The emission factor for the filling of underground tanks is based on splash filling. Hydrocarbon emissions from service station gasoline handling are assumed to be 100% photochemically reactive.

Using Orleans Parish as an example, the general equation used to calculate VOC emissions is as follows:

VOC emissions (tons/year) = A + B + C + D = 2317.9

where:

A = Emissions from filling underground tanks (tons/year) = (11.5 lb/10^3 gal) (208,814.76 x 10^3 gal/year) ÷ (2000 lb/ton) = 1200.7 tons/year

B = Emissions from underground tank breathing (tons/year) = (1.0 lb/10^3 gal) (208,814.76 x 10^3 gal/year) ÷ (2000 lb/ton) = 104.4 tons/year

C = Emissions from vehicle refueling (tons/year) = $(9.0 \text{ lb}/10^3 \text{ gal})\ (208{,}814.76 \times 10^3 \text{ gal/year}) \div (2000 \text{ lb/ton}) = 939.7$ tons/year

D = Emissions from gasoline spillage (tons/year) = $(0.7 \text{ lb}/10^3 \text{ gal})\ (208{,}814.76 \times 10^3 \text{ gal/year}) \div (2000 \text{ lb/ton}) = 73.1$ tons/year

Note: $208{,}814.76 \times 10^3$ gal/yr = 1977 gasoline sales in Orleans Parish

Emissions from service station gasoline handling for all parishes are listed in Table B-1.

4.2.2.2 Aviation Fuel Handling

Aviation Fuel Handling was divided into the two major categories of commercial and non-commercial airports. For the five major commericial airports in Louisiana actual fuel use data were obtained by personal contact with each airport, with one exception, the Shreveport Airport, where this information was unavailable. An estimate of 500,000 gallons per year was made, therefore, on the basis of the size and activity of Shreveport Airport as compared to the other four major airports. Aviation gasoline is the only fuel for which emissions were calculated in view of the fact that jet kerosene emissions were considered to be negligible, based on preliminary calculations.

The emission factor for the refueling of aircraft is the same as that for refueling automobiles since the process is essentially the same. New Orleans Airport is known to have gasoline storage tanks on the field therefore emissions for these facilities are also calculated. Emissions are considered to be 100% photochemically reactive.

With New Orleans Airport serving as an example, the general equation used to calculate VOC emissions is as follows:

$$\text{VOC emissions (tons/year)} = S + F = 25.6 \text{ tons/year}$$

where:

S = Emissions from storage tanks (tons/year) = $(2{,}600 \times 10^3 \text{ gal}) (10 \text{ lb}/10^3 \text{ gal}) \div (2000 \text{ lb/ton}) = 13.0$ tons/year

F = Emissions from refueling aircraft (tons/year) = $(2{,}600 \times 10^3 \text{ gal}) (9.7 \text{ lb}/10^3 \text{ gal}) \div (2000 \text{ lb/ton}) = 12.6$ tons/year

Note: $2{,}600 \times 10^3$ gal = Quantity of fuel sold at New Orleans Airport during 1977

$10 \text{ lb}/10^3$ gal = Emission factor for throughput of storage tanks

$9.7 \text{ lb}/10^3$ gal = Emission factor for refueling aircraft

For the other four airports without bulk storage facilities, only refueling emissions were calculated. Table B-2 lists the emissions for these five commercial airports.

In order to determine the fuel consumption by non-commercial airports, state total general aviation fuel consumption for 1975 was obtained from Highway Statistics.[8] A growth factor based on historical growth trends was applied to bring this figure to the 1977 level.[9] Fuel sales from the five commercial airports were subtracted from this value to yield the number of gallons of aviation sold by non-commercial airports. Fuel sales were then apportioned to the parishes on the basis of Landing and Take-off (LTO) cycles. For the purpose of this section, piston airplane and piston helicopter LTOs were combined. LTOs for each parish are listed in Table C-4 State total LTOs for 1975 were estimated from data available in Census of U.S. Civil Aircraft 1975[10] with the growth factor applied to raise these to the 1977 level. State non-commercial airport fuel consumption in 1977 was calculated as follows:

$$(8{,}961{,}000 \text{ gal}) (1.1172) - (4{,}736{,}618 \text{ gal}) = 5{,}275{,}050 \text{ gal}$$

where:

8,961,000 gal = 1975 State Total Aviation Gasoline Consumption

1.1172 = 1975 to 1977 Growth Factor

4,736,618 = 1977 Aviation Gasoline Consumption by Commercial Airports

State total LTOs in 1977 were calculated as follows:

$$\text{LTOs} = (2507)\ (365)\ (1.1172) = 1{,}022{,}299 \text{ LTOs/year}$$

where:

2507 = 1975 State Total Piston Aircraft Registrations

365 = Number of Days per Year (Assuming 1 LTO per Aircraft per Day)

1.1172 = 1975 to 1977 Growth Factor.

As an example, Orleans Parish aviation gasoline consumption for 1977 was calculated as follows:

$$\left(\frac{132{,}403 \text{ LTOs}}{1{,}022{,}299 \text{ LTOs}}\right) (5{,}275{,}050 \text{ gal}) = 683.1978 \times 10^3 \text{ gal}$$

where:

132,403 LTOs = 1977 Orleans Parish LTOs

After calculation of fuel consumption for each parish, emissions were calculated in exactly the same manner as were emissions from service stations. This is because small, non-commercial airports have identical tanks and pumps as do service stations and refueling is done in the same manner.

Continuing with Orleans Parish as an example, the general equation used to calculate VOC emissions is shown below:

$$\text{VOC emissions (tons/year)} = A + B + C + D = 7.6$$

where:

A = Emissions from Filling Underground Tanks (tons/year) = $(683.1978 \times 10^3 \text{ gal})\ (11.5 \text{ lb}/10^3 \text{ gal}) \div (2000 \text{ lb/ton}) = 3.9$ tons/year

B = Emissions from Underground Tank Breathing (tons/year) =
$(683.1978 \times 10^3 \text{ gal}) (1.0 \text{ lb}/10^3 \text{ gal}) \div$
$(2000 \text{ lb/ton}) = 0.4$ tons/year

C = Emissions from Refueling Aircraft (tons/year) =
$(683.1978 \times 10^3 \text{ gal}) (9.0 \text{ lb}/10^3 \text{ gal}) \div$
$(2000 \text{ lb/ton}) = 3.1$ tons/year

D = Emissions from Gasoline Spillage (tons/year) =
$(683.1978 \times 10^3 \text{ gal}) (0.7 \text{ lb}/10^3 \text{ gal}) \div$
$(2000 \text{ lb/ton}) = 0.2$ tons/year

Emissions are considered to be 100% reactive. All non-commercial airport fuel handling emissions are listed in Table B-3.

4.2.2.3 Ship and Barge Loading Emissions

Ship and barge loading emissions were calculated for petroleum and chemical products for the ports of Baton Rouge, Lake Charles, and New Orleans. The amount of hydrocarbon products handled at the ports was obtained from the Emission Inventory Questionnaires and from Waterborne Commerce of the United States[11] for the years 1963-1976. The substances included in the inventory and their densities are shown in Table 4-3. The emission factors for the petroleum products were derived from AP-42; however, those for the chemical products were derived from Hydrocarbon/Photochemical Oxidant Control Strategy for the State of Texas."[12] These emission factors are listed in Table 4-4.

Using the port of Baton Rouge as an example, there is one source in West Baton Rouge Parish that is loading hydrocarbon products. Its emissions from crude oil handling are calculated as follows:

VOC emissions (tons/year) = $550{,}200 \times 1.7 \div 2{,}000$ lb/ton $= 467.1$

where:

550,200 = amount of crude oil handled (10^3 gals)
1.7 = emission factor for crude oil.

To this figure was added the emissions from the other commodities such as fuel oil, gasoline, and diesel oil for a total of 911.6 tons of VOC emissions in West Baton Rouge Parish. Ship and barge loading emissions for the ports of Baton Rouge, Lake Charles and New Orleans ar[illegible]own in Table B-4.

TABLE 4-3. SHIP AND BARGE LOADING COMMODITIES

SIC [a]	COMMODITY	DENSITY (LBS/GAL.) [b]
1311	CRUDE OIL	7.1
2811	CRUDE TAR, OIL, GAS PRODUCTS	8.6
2813	ALCOHOLS	6.6
2817	BENZENE AND TOLUENE	7.3
2911	GASOLINE	5.6
2912	JET FUEL	7.0
2913	KEROSENE	7.0
2914	DISTILLATE FUEL OIL	7.1
2915	RESIDUAL FUEL OIL	7.9

[a] STANDARD INDUSTRIAL CLASSIFICATION CODE

[b] DENSITY TAKEN FROM AP-42

TABLE 4-4. SHIP AND BARGE LOADING EMISSION FACTORS

COMMODITY	SHIP LOADING ($LB/10^3$ GAL)	BARGE LOADING ($LB/10^3$ GAL)
CRUDE OIL	0.7	1.7
CRUDE TAR, OIL, GAS PRODUCTS	0.7	1.7
ALCOHOLS	2.01	2.01
BENZENE AND TOLUENE	2.01	2.01
GASOLINE	1.4	4.0
JET FUEL	0.5	1.2
KEROSENE	0.005	0.013
DISTILLATE FUEL OIL	0.005	0.012
RESIDUAL FUEL OIL	0.00004	0.00009

4.2.2.4 Dry Cleaning Emissions

Dry cleaning emission factors are usually based on the weight of clothes cleaned. Data pertaining to the amount of clothes cleaned per establishment, however, are extremely difficult to obtain and using this approach would not take into account varying levels of emission controls at the different establishments. It was decided, therefore, to calculate emissions on the basis of solvent consumption assuming that all solvent purchased for dry cleaning is eventually evaporated to the atmosphere.

The three types of solvents most commonly used for dry cleaning are perchloroethylene, stoddard, and Freon-113. Perchloroethylene is used primarily by commercial establishments. Industrial dry cleaners usually use stoddard and coin-operated dry cleaners most often use Freon-113.[13] Since Freon-113 is photochemically non-reactive, coin-operated dry cleaning establishments were not included in this inventory. The assumption was made that all commercial dry cleaners use perchloroethylene and all industrial dry cleaners use stoddard solvent.

The figure for the 1975 national sales of perchloroethylene was obtained from Synthetic Organic Chemicals, United States Production and Sales, 1975.[14] This figure was then apportioned to parishes on the basis of the methodology described in Methodologies for Countywide Estimation of Coal, Gas, and Organic Solvent Consumption.[15] The 1975 national sales figure for special naptha's, in which stoddard solvent is included, was taken from Mineral Industry Surveys.[16] Stoddard solvent was then apportioned to parishes by the methodology described in reference 15. By this method, 6% of all special naptha consumption and 58% of all perchloroethylene consumption are attributed to dry cleaning.

Solvent consumption is apportioned to parishes on the basis of employment within the dry cleaning SIC codes. Parish employment figures were obtained from Louisiana County Business Patterns, 1975.[17] United States employment figures were taken from the 1967 and 1972 Census of Selected Services[18] using historical growth rates as a basis for projection to 1975. After 1975 emissions were calculated for each parish, growth factors based on historical growth trends of the industry in the state of Louisiana were applied to calculate 1977 emissions.

With Orleans Parish serving as an example, the general equation used to calculate VOC emissions from Dry Cleaning is as follows:

$$\text{VOC emissions (tons/year)} = C + I = 1580.4$$

where:

C = Emissions from Commercial Dry Cleaning Operations (tons/year) =

$$(0.8626)\left(\frac{571}{178{,}969}\right)(589{,}311{,}000 \text{ lb/year})(0.58) \div (2000 \text{ lb/ton}) = 470.4 \text{ tons/year}$$

I = Emissions from Industrial Dry Cleaning Operations (tons/year) =

$$(1.0449)\left(\frac{242}{51{,}287}\right)(7{,}504{,}770{,}000 \text{ lb/year})(0.06) \div (2000 \text{ lb/ton}) = 1110.0 \text{ tons/year}$$

Note: 0.8626 = Louisiana Growth Factor (1975-1977) for SIC 7216

571 = 1975 Orleans Parish Employment in SIC 7216

178,969 = 1975 United States Employment in SIC 7216

589,311,000 = 1975 United States Perchloroethylene Consumption (lbs)

0.58 = Portion of Perchloroethylene Consumption Used for Dry Cleaning

1.0449 = Louisiana Growth Factor (1975-1977) for SIC 7218

242 = 1975 Orleans Parish Employment in SIC 7218

51,287 = 1975 United States Employment in SIC 7218

7,504,770,000 = 1975 United States Special Naptha Consumption (lbs)

0.06 = Portion of Special Napthas Consumption used for Dry Cleaning

A complete listing of dry cleaning emissions by parish is shown in Table B-5.

4.2.2.5 Degreasing

Degreasing emissions were calculated on the basis of solvent consumption with the assumption that all solvent used in degreasing operations eventually evaporated into the atmosphere. The methodology for estimating solvent consumption by parish is similar to that used for dry cleaning. Perchloroethylene, trichloroethylene, 1, 1, 1, - trichloroethane, and methylene chloride are the four major solvents used in degreasing operations. 1, 1, 1, - Trichloroethane emissions are excluded from the inventory due to the fact that they are photochemically non-reactive. Reference 15 estimates that 15% of all perchloroethylene, 87% of all trichloroethylene, and 11% of all methylene chloride consumption is used in degreasing operations. The national sales volume of these solvents was extracted from reference 15 for 1975. Solvent use was then apportioned to individual parishes on the basis of employment in SIC codes 34 through 39. As with dry cleaning, employment figures were taken from County Business Patterns[17] and the Census of Selected Services.[18]

Emissions from 1975 were projected to 1977 on the basis of historical growth rates of employment in SIC 34 through 39 in the state of Louisiana.

All emissions calculated were considered to be 100% photochemically reactive. With Orleans Parish serving as an example, the general **equation** used to calculate VOC emissions from degreasing operations is shown below:

$$\text{VOC emissions (tons/year)} = (1.1113)\left(\frac{8,308}{7,567,129}\right)(388,654,110\ \text{lb/year}) \div (2000\ \text{lb/ton}) = 237.1$$

where:

1.1113 = 1975 to 1977 Louisiana Growth Factor
8,308 = 1975 Orleans Parish Employment in SIC Codes 34 - 39
7,567,129 = 1975 United States Employment in SIC Codes 34 - 39
388,656,110 lb/year = 1975 United States Degreasing Solvents Consumption minus 1, 1, 1 - Trichloroethane.

All degreasing emissions for 1977 are listed in Table B-6.

4.2.2.6 Surface Coating Emissions

Surface Coating emissions are the most complex of the area sources. There are a large number of different types of operations involved in surface coating and a large number of different solvents involved. Emissions were separated into the industrial and non-industrial categories recommended in the guideline document. These categories and their SIC codes are listed in Table 4-5. Listed in Table 4-6 are the eleven major solvents used in surface coating activities. Listed also is the percentage of the national consumption of each solvent which is used for surface coating.

TABLE 4-5. SURFACE COATING PROCESSES

SIC CODE	PROCESS
15	ARCHITECTURAL COATING
22, 23	FABRIC
24	FLAT WOOD PRODUCTS
25	WOOD FURNITURE
26, 27	PAPER
3411	CANS
358	LARGE APPLIANCES
36	MAGNETIC WIRE
37	TRANSPORTATION EQUIPMENT
75	AUTO REFINISHING
34, 35	OTHER METAL PRODUCTS
31, 32, 38, 39	OTHERS

TABLE 4-6. SURFACE COATING SOLVENT USE

SOLVENT	% USED FOR SURFACE COATING
SPECIAL NAPTHAS	26.0%
ETHANOL	4.0%
TOLUENE	5.0%
ACETONE	9.0%
XYLENE	6.0%
METHYL ETHYL KETONE	65.0%
METHYLENE CHLORIDE	31.0%
ETHYLENE DICHLORIDE	0.3%
ETHYL ACETATE	70.0%
CYCLOHEXANE	2.0%
METHYL ISOBUTYL KETONE	65.0%

By applying the above percentage figures to national consumption data for the solvents, taken from references 14 and 16, a figure for national consumption of surface coating solvents is obtained. Solvent consumption is apportioned to parishes on the basis of employment within the specific SIC codes. National employment figures are based on the total of all SIC codes listed in Table 4-5. Parish employment is broken into the specific processes by way of the applicable SIC codes. This breakdown was carried out for each of the twelve processes in each of the nineteen parishes.

It is assumed that all volatile solvents used in surface coating evaporate into the atmosphere, therefore emissions are based directly on solvent consumption. As previously delineated, employment data were derived from references 17 and 18. Growth factors for 1975 to 1977 were calculated for each surface coating category separately.

Using surface coating of paper products in Orleans Parish as an example, the general equation used to calculate VOC emissions is as follows:

$$\text{VOC emissions (tons/year)} = (0.99319)\left(\frac{3{,}366}{15{,}551{,}661}\right)(3{,}156{,}065{,}900\ \text{lb/year}) \div (2000\ \text{lb/ton}) = 339.2$$

where:

0.99319 = Louisiana Growth Factor (1975 to 1977) for SIC Codes 26 and 27

3,366 = Orleans Parish Employment in SIC Codes 26 and 27

15,551,661 = United States Employment in All Surface Coating SIC Codes

3,156,065,900 lb/year = 1975 United States Consumption of Surface Coating Solvents.

This calculation is repeated for each surface coating category in each parish. The only figures which vary are the parish employment and growth factor for each surface coating SIC in each parish. All other figures remain constant. Emissions are considered to be 100% photochemically reactive.

A complete listing of surface coating emissions is found in Table B-7.

4.2.2.7 Printing and Publishing

Emissions from printing and publishing operations are due, primarily, to solvent usage for the cleaning of presses. Some volatile organics are present in ink, however, those vary greatly with different types of ink and their contribution to the overall emissions from printing and publishing are minimal. Emissions, therefore are based on consumption of these cleaning solvents. Reference 15 estimates that 8% of all special naptha consumption, 5% of all toluene consumption, and 8% of all ethyl acetate consumption are used for printing and publishing operations. National consumption figures for these solvents were taken from references 14 and 16. Solvent consumption was apportioned to the parishes on the basis of employment in SIC codes 264, 265, and 27. As in previous methodologies, these data were taken from references 17 and 18.

Using Orleans Parish as an example, the general equation used to calculate VOC emissions from printing and publishing is shown below:

$$\text{VOC emissions (tons/year)} = (1.0125) \left(\frac{3{,}324}{1{,}489{,}177}\right) (771{,}469{,}040 \text{ lb/year}) \div (2000 \text{ lb/ton}) = 871.8$$

where:

1.0125 = 1975 to 1977 Louisiana Growth Factor

3,324 = 1975 Louisiana Employment in SIC Codes 264, 265, and 27

1,489,177 = 1975 United States Employment in SIC Codes 264, 265, and 27

771,469,040 lb/year = 1975 United States Printing and Publishing Solvent Consumption

All emissions are considered to be 100% photochemically reactive. Table B-8 shows the printing and publishing VOC emissions for all nineteen parishes included in the inventory.

4.2.2.8 Other Solvent Use

A large amount of solvent is consumed each year by areas other than those described in the previous sections. These have been grouped into the classification of "other" solvent use. Table 4-7 lists the solvents that are used in this category. Listed also is the percent of the total consumption of each solvent that is used in this area.

TABLE 4-7. "OTHER" SOLVENT USE

SOLVENT	% OF TOTAL CONSUMPTION USED IN "OTHER" CATEGORY
SPECIAL NAPTHAS	60.0%
PERCHLOROETHYLENE	10.0%
ETHANOL	35.0%
TRICHLOROETHYLENE	3.0%
ACETONE	16.0%
XYLENE	7.0%
METHYL ETHYL KETONE	7.0%
METHYLENE CHLORIDE	37.0%
METHANOL	9.0%
ETHYLENE DICHLORIDE	2.7%
METHYL ISOBUTYL KETONE	25.0%

Not included in this listing are Freon 113 and 1, 1, 1 - Trichloroethane because of their non-reactivity.

Solvent consumption is apportioned to the parish level on the basis of population and employment in SIC codes 19 - 39. The apportioning percentage is the average of the percentages derived from these two variables. Employment figures were obtained from references 17 and 18. National population statistics were obtained from Current Population Reports as published by the Bureau of Census.[19] Parish level population statistics for Louisiana were obtained from Louisiana Tech University.[20] Growth factors for the 1975 to 1977 period were based equally upon state population growth and employment growth in the applicable SIC codes.

With Orleans Parish serving as an example, the equation used to calculate VOC emissions from "other" solvent use is as follows:

$$\text{VOC emissions (tons/year)} = (1.03445) \left[\frac{\left(\frac{562,420}{212,748,000}\right) + \left(\frac{18,381}{18,108,419}\right)}{2} \right] (5,901,981,800) \div (2000 \text{ lb/ton}) = 5,586.0$$

where:

1.03445 = 1975 to 1977 Growth Rate
562,420 = 1975 Orleans Parish Population
212,748,000 = 1975 United States Population
18,381 = 1975 Orleans Parish Employment in SIC Codes 19 - 39
18,108,419 = 1975 United States Employment in SIC Codes 19 - 39
5,901,981,800 lb/year = 1975 United States Solvent Consumption.

Emissions are considered to be 100% photochemically reactive. A complete listing of "other" solvent use emissions can be found in Table B-9.

4.2.2.9 Cutback Asphalt Paving

An estimate of the volume of cutback asphalt used in the state of Louisiana was provided by the Louisiana Department of Highways. An accurate figure was available for the amount of cutback paving that was performed by the state of Louisiana Department of Highways. The department stated that approximately 20 times that amount was done by county and local agencies. Using this information it was estimated that 2,256,198 gal. of cutback asphalt was applied in the state of Louisiana during 1977. This value was apportioned to the parishes of interest on the basis of miles of highway in the parishes.

An example calculation for Orleans Parish is shown below:

$$\text{VOC emissions (tons/year)} = \left(\frac{121.25 \text{ miles}}{16,238.97 \text{ miles}}\right) (2,256,198 \text{ gal/year}) (0.35) (6.5 \text{ lb/gal}) (0.7) \div (2000 \text{ lb/ton}) = 13.5$$

where:

121.25 = miles of road in Orleans Parish
16,238.97 = miles of road in Louisiana
2,256,198 = gallons of Cutback Asphalt applied in Louisiana

0.35 = % solvent per gallon of Cutback Asphalt
6.5 = Density of solvent (lbs/gal)
0.7 = % solvent released to the atmosphere

All solvent released to the atmosphere is considered to be 100% reactive. A summary of Cutback Asphalt emissions can be found in Table B-10.

4.2.2.10 Forest Fires

Forest fire emissions are based on data provided by the Louisiana Forestry Commission pertaining to the acreage of forest land burned in each parish during 1977. Using AP-42 fuel loading and emission factors, total hydrocarbon emissions were calculated. Of these emissions, 38% were considered to be photochemically reactive.[6]

An example calculation for Beauregard Parish is shown below:

VOC emissions (tons/year) = (THC) (0.38) = 431.3

where:

THC = Total Hydrocarbon Emissions (tons/year) = (10,508 acres) (216 lb/acre) ÷ (2000 lb/ton) = 1135.0

Note: 10,508 = Acres of Forest Land Burned in Beauregard Parish (1977)
216 = Emission Factor
0.38 = Reactivity Factor

All Forest Fire emissions for the applicable parishes are listed in Table B-11.

4.2.2.11 Agricultural Burning

Agricultural burning emissions were calculated only for the burning of sugar cane and is based on the number of acres burned each year. The total acreage of sugar cane in each parish was obtained from the U. S. Department of Agriculture, Extension Service in Houma, Louisiana. The fuel loading factor was provided by a local manufacturer of sugar and molasses. This factor is based on the weight of the cane stalks and leaves, and the amount of each that is left on the ground to be burned.

Using Lafourche Parish as an example, the following equation is used to calculate VOC emissions:

$$\text{VOC emissions (tons/year)} = (34464)\ (0.146)\ (10\ \text{lb/ton}) \div (2000\ \text{lb/ton}) = 2.5$$

where:

34464 = acres of sugar cane in Lafourche parish
0.146 = fuel loading factor
10 lb/ton = sugar cane burning emission factor.

4.2.2.12 Pesticide Application Emissions

Some commonly used pesticides are suspended in a solvent base for ease of application. This solvent evaporates upon application leaving the pesticide residue on the crops. Volatile organic emissions can be estimated using the quantity of these pesticides applied and percent of which is solvent. Several attempts were made to obtain these data; however it was unavailable from either state or Federal sources. These emissions, therefore, are omitted from this inventory.

4.2.3 Mobile Source Emissions

VOC emissions from mobile sources are categorized into the following areas:

- Highway motor vehicles
- Aircraft
- Vessels and pleasure craft
- Railroads
- Other off-highway fuel use

The methodologies used in compiling the inventory for the above categories are discussed in the following subsections. Also, using Orleans parish throughout, an example calculation for VOC emissions will be shown. All pertinent data and results used and tabulated in the inventory for mobile sources can be found in Appendix C.

4.2.3.1 Highway Motor Vehicles

Highway motor vehicles were classified into the following categories:

- Light-duty automobiles (LDV)
- Light-duty trucks 1 (LDT1)
- Light-duty trucks 2 (LDT2)
- Heavy-duty gasoline powered vehicles (HDG)
- Heavy-duty diesel powered vehicles (HDD)
- Motorcycles (MC)

In the above classifications light-duty trucks 1 are those trucks weighing 6,000 lbs. (gross vehicle weight) and less, light duty trucks 2 weigh between 6,001 - 8,500 lbs., and heavy duty vehicles weigh over 8,500 lbs.

In order to estimate VOC emissions for highway motor vehicles, vehicle miles of travel (VMT) data were collected, and emission factors calculated for each of the study parishes. Emissions were then calculated by multiplying the VMT data by the appropriate emission factor.

VMT data were collected by roadway type from the Louisiana Department of Transportation and Development.[21] The roadways were classified according to the state highway system and are as follows:

- Interstate final
- State primary
- State secondary
- State farm to market

These were further separated to distinguish between VMT in rural and urban areas. This allows for greater sensitivity, since mobile source emission factors vary appreciably with speed. VMT from local rural roads, not included in the state highway system, were also obtained from the Louisiana Department of Transportation and Development. VMT on local urban roads were not available; therefore, VOC emissions from highway motor vehicles should be slightly conservative.

Emission Factors -- Emission factors were calculated for the six highway motor vehicle classes (light-duty automobile, light-duty truck 1, light-duty truck 2, heavy-duty gas, heavy-duty diesel and motorcycle) for exhaust, evaporative and crankase hydrocarbon emissions by the Mobile Source Emissions Model.[5] This model follows the procedures outlined in the document Mobile Source Emissions Factors [22] (latest update to AP-42,[4] including supplements 1 - 7, for calculating emission factors for highway motor vehicles.)

The emission factors for each vehicle category were weighted according to the percent of the total VMT each contributed. Since the VMT mix for Louisiana highways was not available, the nationwide VMT mix was used;[5] LDV = 80.3%, LDT1 = 5.8%, LDT2 = 5.8%, HDG = 4.5%, HDD = 3.1%, and MC = 0.5%. Emission factors are dependent upon vehicle population by model year, average vehicle speed, ambient temperature and percent cold/hot start operations. Input data into the mobile source emissions model will be discussed in the following paragraph.

Light-duty automobile registration data by model year and parish were obtained from the Motor Statistical Division of the R. L. Polk

Company.[23] Using the state highway system roadtype classifications, the average speeds assumed for calculation of emission factors were:*

	URBAN (MPH)	RURAL (MPH)
INTERSTATE FINAL	54.1	55.8
STATE PRIMARY	46.8	53.1
STATE SECONDARY	46.8	51.8
STATE FARM TO MARKET	30.0	37.0
LOCAL RURAL**	30.0	37.0

* BASED ON DATA OBTAINED FROM THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT.[21]

** NOT PART OF THE STATE HIGHWAY SYSTEM.

Temperature data for the New Orleans, Baton Rouge, Lake Charles and Shreveport areas were obtained from the National Oceanic and Atmospheric Administration (NOAA).[24] The percent cold/hot start operations used were 20.6, 27.3 and 20.6%; these represent the national averages.[5] An air conditioning correction factor (1.03) for light-duty vehicles (automobiles) was used, by assuming air conditioners in automobiles are in use 50% of the time for seven months of the year. The non-methane hydrocarbon emissions were computed using the reactivity factors in the Mobile Source Emissions Model.[5]

Therefore, seven computer runs were made for each parish, corresponding to the seven different roadway speeds. These emission factors were then multiplied by the corresponding VMT to get VOC emissions. 1977 VOC emissions (Table C-1) were then projected from historical growth trends in VMT from the years 1972 - 1976.

An example calculation for highway motor vehicle VOC emissions for Orleans parish follows. The general equation to calculate motor vehicle VOC emissions is:

$$\text{VOC Emissions (tons/year)} = \frac{E_f \times \text{VMT} \times 365 \text{ days/year}}{907{,}180 \text{ grams/ton}}$$

where:

E_f = Emission factor from Mobile Source Emissions Model[5]
(Table C-2).

VMT = Vehicle miles of travel (Table C-2).

Orleans parish 1976 VOC emissions (tons/year) from highway motor vehicles are:

1. For 30 mph average speed
   9.74 x 695,144 x 365 ÷
   907,180 = 2,724.2
2. For 37 mph average speed
   No VMT reported = 0.0
3. For 46.8 mph average speed
   8.30 x 1,679,818 x 365 ÷
   907,180 = 5,609.7
4. For 51.8 mph average speed
   No VMT reported = 0.0
5. For 53.1 mph average speed
   8.15 x 46,985 x 365 ÷
   907,180 = 154.1
6. For 54.1 mph average speed
   8.12 x 1,825,037 x 365 ÷
   907,180 = 5,962.5
7. For 55.8 mph average speed
   7.56 x 303,050 x 365 ÷
   907,180 = 921.8

TOTAL 15,372.3

VOC emissions (1976) for motor vehicles by parish can be found in Table C-3.

4.2.3.2 Aircraft

Aircraft VOC emissions were based on the number of landing and takeoff (LTO) cycles performed by each type of aircraft. Aircraft were categorized into the following four general classes:

- Commercial air carrier
- General aviation
- Military
- Helicopter

These four classes were further subdivided by the type of power supply: (1) jet, (2) turboprop, or (3) piston. Since the emission factors in AP-42 were based on a per engine basis, the actual aircraft model or the number of engines on each aircraft that comprised a class were found. If different aircraft with varying numbers of engines made up a particular category, each were weighted by the number of LTO cycles.

Each airport in the before mentioned study areas was contacted for the above information. This information was obtained for 1977 from all airports with FAA controlled towers, and from most of the smaller general aviation airports, which do not have FAA controlled towers. For these airports, for which first hand (1977) information could not be obtained, the LTO cycles were approximated by assuming the total number of eligible aircraft in each parish were equal to the number of daily LTO cycles performed by civil aircraft.[1] The number of registered civil aircraft by parish were available from the 1975 Census of U.S. Civil Aircraft.[10] Growth factors for projecting these numbers to 1977 LTO cycles were obtained from Aviation Forecast - Fiscal Years 1978 - 1989.[9]

The following will be an example calculation for the total amount of VOC emissions from aircraft in Orleans Parish. The emission and reactivity factors were taken from the reference documents.[3,5] The general equation used to calculate VOC emissions for each aircraft type is as follows:

$$\text{VOC emissions (tons/year)} = \text{LTO} \times \text{R} \times \text{NOE} \times E_f \div 2000 \text{ lbs/ton}$$

where:

LTO = 1977 landing-takeoff cycles (Table C-4).

R = reactivity factor[6]

NOE = number of engines

E_f = emission factors from AP-42[4] (Table C-5)

For Orleans Parish, VOC emissions (tons/year) are:

1. Air Carrier Turboprop
   453 x 0.93 x 2 x 2.9 ÷
   2,000 = 1.22
2. Business Jet
   2,843 x 0.93 x 2 x 3.6 ÷
   2,000 = 9.52
3. General Aviation
   (1 engine) = 103,264 x
   0.80 x 1 x .40 ÷
   2,000 = 16.52
   (2 engine) = 29,139 x
   0.80 x 2 x .40 ÷
   2,000 = 9.32
4. Helicopter
   1,786 x 0.93 x 1 x 0.52 = 0.43
5. Military (Jet)
   1,191 x 0.93 x 2 x 1.62 = 1.79

TOTAL 38.8

The total VOC emissions from aircraft by parish can be found in Table C-6.

4.2.3.3 Vessels and Pleasure Craft

Total VOC emissions from waterborne activity includes emissions from both vessels and pleasure craft, however the methodologies used to calculate emissions from each are different and will be discussed separately in the following subsections.

4.2.3.3.1 Vessels

This category includes large cargo and passenger ships, oil tankers, tugboats and all other steamships and motorships that use fuel oil. Since large ships operate their engines while in port, both dockside and underway emissions were calculated.

VOC emissions were estimated according to the reference guideline [1] using vessel movement data from the U.S. Army Corps of Engineers, Waterborne Commerce of the United States[11] and fuel consumption data from the Department of Energy's, Energy Data Reports.[25] Average annual growth factors based upon historical growth in freight tonnage between 1963 and 1976 were used to project 1977 vessel VOC emissions.[11] (Table C-7)

In-Port VOC Emissions

In-port VOC emissions were calculated by (1) estimating the amount of fuel consumed by vessels while in port and (2) multiplying by the appropriate emission factor in AP-42.[4] In-port fuel consumption data were obtained by (1) calculating the number of vessel-days in each port (for vessels with drafts greater than 18 feet), (2) distributing vessel-days between those ships that use residual oil and those that use distillate (diesel) oil and (3) by multiplying the total distillate oil vessel-days by 660 gallons per day, and the total residual oil vessel-days by 1,900 gallons per day.[1] Emissions for any port that included more than one parish, or was bordered by one or more parishes, were apportioned to each parish by wind direction and shoreline mileage.

The general equation for in-port VOC emissions from vessels is:

$$\text{VOC (tons/years)} = \text{VIP} \times S \times A \times B \div 1{,}000 \times E_f \times R \div 2{,}000 \text{ \#/ton}$$

where:

VOC = Volatile organic compounds for each type of vessel in tons/year.

VIP = Vessels in port (found in Table C-8).

S = Average stay in port (Table C-9, data obtained from the New Orleans Port Authority).[26]

A = Fraction of vessel-days that are diesel fuel users and residual fuel user (0.40 = diesel and 0.60 = residual).

B = 660 gals. per day for distillate fuel users and 1,900 gals. per day for residual fuel users.

E_f = Emission factor from AP-42 in lbs/1000 gals.[4]

R = 0.15 (Reactivity factor for industrial boilers).[6]

1,000 = Converts fuel usage data to 1,000 gal. units.

The VOC emissions (tons/year) for the port of New Orleans are:

1. VOC (Passenger and Cargo - Diesel) =
   6,731 x 3 x .40 x 660 ÷ 1,000 x 3 x
   0.15 ÷ 2,000 = 1.19 = 1.20

2. VOC (Tanker - Diesel) =
   1,994 x 1.25 x .40 x 660 ÷ 1,000 x
   3 x 0.15 ÷ 2,000 = 0.1

3. VOC (Tug - Diesel) =
   129 x 2.5 x .40 x 660 ÷ 1,000 x
   3 x 0.15 ÷ 2,000 = 0.02

TOTAL (Distillate) 1.32

4. VOC (Passenger and Cargo - Residual) =
   6,731 x 3 x 0.60 x 1,900 ÷
   1,000 x 3.2 x 0.15 ÷ 2,000 = 5.5

5. VOC (Tanker - Residual) =
   1,994 x 1.25 . .60 x 1,900 ÷
   1,000 x 3.2 x 0.15 ÷ 2,000 = 0.7

6. VOC (Tug - Residual) =
   129 x 2.5 x .60 x 1,900 ÷
   1,000 x 3.2 x 0.15 ÷ 2,000 = 0.09

TOTAL (Residual) 6.29

Since the port of New Orleans encompasses more than one parish, the breakdown of VOC emissions by parish are:

PARISH	VOC EMISSIONS (TONS/YEAR)	
	DISTILLATE	RESIDUAL
JEFFERSON*	0.4	1.8
ORLEANS*	1.0	4.5
TOTAL	1.4	6.3

* THE WIND DIRECTION IS NOT DECISIVELY FROM ANY ONE DIRECTION; THEREFORE EMISSIONS WERE APPORTIONED DIRECTLY BY SHORELINE MILEAGE. OF THE TOTAL 15.7 MILES OF PORT SHORELINE MILEAGE, ORLEANS PARISH HAS 11.2 MILES AND JEFFERSON PARISH HAS 4.5 MILES. THIS MEANS THAT 28.6 AND 71.4% OF THE EMISSIONS ARE APPORTIONED TO JEFFERSON AND ORLEANS PARISH RESPECTIVELY.

In-port VOC emissions for all ports can be found in Table C-10.

Underway VOC Emissions

Underway emissions were calculated by estimating the amount of distillate* oil burned underway, apportioning the fuel to the appropriate port areas and parishes, and multiplying by the emission factor from AP-42.[4]

Fuel consumption was estimated by subtracting the sum for all ports of the in-port distillate fuel consumption from the state total for distillate oil consumption by vessel.[25] The remaining distillate fuel oil consumed was distributed to the ports according to tonnage handled; they in turn were apportioned to the parishes along the waterway by the amount of shoreline mileage.

The general equation used to calculate underway VOC emissions from vessels is:

$$\text{Underway VOC Emissions (tons/year)} = \text{GAL} \div \text{TM} \times \text{M} \div 1{,}000 \times E_f \times R \div 2{,}000 \text{ lbs/ton}$$

---

*According to the procedures document [1] underway emissions were based solely on distillate fuel consumption data.

where:

GAL = Total gallons of fuel apportioned to respective port.

TM = Total miles of shoreline for all parishes along waterway in respective port area.

M = Miles of shoreline for parish which underway emissions are being calculated (Table C-11).

E_f = Emission factor from AP-42.[4] (Table C-11).

R = Reactivity factor.[5] (Table C-11).

1,000 = Converts fuel usage data to 1,000 gal. units.

Underway VOC emissions by parish in port of New Orleans area are:

Plaquemine = $(7.6456236 \times 10^7) \div 101 \times$
$80 \div 1,000 \times 50 \times .15 \div 2,000 =$ 227.1

St. Bernard = $(7.6456236 \times 10^7) \div 101 \times$
$5.867 \div 1,000 \times 50 \times .15 \div 2,000 =$ 16.7

Orleans = $(7.6456236 \times 10^7) \div 101 \times$
$9.267 \div 1,000 \times 50 \times .15 \div 2,000 =$ 26.3

Jefferson = $(7.6456236 \times 10^7) \div 101 \times$
$5.867 \div 1,000 \times 50 \times .15 \div 2,000 =$ 16.7

TOTAL 286.8

Underway VOC emissions can be found in Table C-11.

4.2.3.3.2 Pleasure Craft

Emissions from smaller vessels (pleasure and small commercial boats) were estimated from registration data for motorboats, obtained from the Louisiana Wildlife and Fishery Commission [27] and the U.S. Coast Guard.[28] These registrations were obtained by parish* and district** respectively. They were then assigned to the following study areas:

---

* Louisiana Wildlife and Fishery Commission gave inboard outboard boat registrations by parish.

**The U.S. Coast Guard gave registrations for boats greater than five tons by district. These registrations were then apportioned to the parishes in each district.

NEW ORLEANS

JEFFERSON
LAFOURCHE
ORLEANS
PLAQUEMINE
ST. BERNARD
ST. CHARLES
ST. JOHN THE BAPTIST

BATON ROUGE

ASCENSION
EAST BATON ROUGE
IBERVILLE
ST. JAMES
WEST BATON ROUGE

SHREVEPORT

BOSSIER
CADDO

LAKE CHARLES

CALCASIEU

SEPARATE PARISHES

BEAUREGARD
GRANT
LAFAYETTE
POINTE COUPEE
ST. MARY

These study areas were chosen because of parish and waterway (lakes, rivers, etc.) proximities. In assigning VOC emissions to each parish, motorboat registration data were used as the distributing factor.

All boats registered with the U.S. Coast Guard were assumed to operate on diesel fuel. All other inboard and outboard boats were distributed in the following manner:

(1)* all inboards 28' and less and all outboards were assumed to use gasoline and

(2)* all inboards greater than 28' were assumed to use diesel fuel.

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*This information was obtained from personal contact with local marinas and from the staff of the Boating Industry magazine.

Emissions from diesel powered boats were calculated assuming the national average for annual usage and a fuel consumption rate of 10 gal/hr.* Also, the national averages for annual usage and fuel consumption were used in calculating VOC emissions from gasoline powered boats. All outboard engines were assumed to be two-stroke; the reactivity factor for two-stroke motorcycles from Mobile Source Emission Factors [22] was used. The reactivity factors for diesel and gasoline automobile engines from the reference document [6] were used for diesel and gasoline inboard engines respectively.

The general equations for fuel usage are given below:

Inboard gasoline consumption (gal/yr) = # registered inboards x 3 gal/hr x 10 hrs/mo x C (mo/yr)

Inboard diesel consumption (gal/yr) = # registered inboards x 10 gal/hr x 10 hrs/mo x C (mo/yr)

Outboard gasoline consumption (gal/yr) = # registered outboards x 1.5 gal/hr x 10 hrs/mo x C (mo/yr)

where:

C = Number of months during which the monthly mean temperature exceeds 55° for parishes south of 37° latitude.

Fuel consumption for Orleans parish is:

1. Since Orleans parish is in the New Orleans district, fuel consumptions will be calculated for this district.

Inboard gasoline consumption (gal/yr) = 3,003 x 3 gal/hr x 10 x 9 = 810,810

Inboard diesel consumption (gal/yr) = 3,970 x 10 gal/hr x 10 x 9 = 3,573,000

Outboard gasoline consumption (gal/yr) = 52,575 x 1.5 gal/hr x 10 x 9 = 7,097,625

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*Obtained from personal contact with local marinas.

Fuel usage data can be found in Table C-12.

2. VOC Emissions for New Orleans district

   a. General equation used

Boat VOC (tons/yr) = Fuel used ÷ 1,000 x E_f x R ÷ 2,000 lbs/ton

where:

Fuel used = fuel used by each engine type in gal/yr.

E_f = Emission factor from AP-42.[4]

R = Reactivity factor.[6, 22]

1,000 = Converts fuel usage into 1,000 gallon units.

   b. Calculating VOC emissions (tons/yr)

Inboard gasoline	= 810,810 gal/yr ÷ 1,000 x 86 lb/1,000 gal x 0.86 ÷ 2,000 =	30.0
Inboard diesel	= 3,573,000 gal/yr ÷ 1,000 x 180 lb/1,000 gal x 0.89 ÷ 2,000 =	286.2
Outboard gasoline	= 7,097,625 gal/yr ÷ 1,000 x 1,100 lb/1,000 gal x 0.99 ÷ 2,000 =	3,864.7
	TOTAL	4,180.9

VOC emissions from pleasure craft and small commercial boats by district can be found in Table C-13.

3. Pleasure and small commercial boat emissions for Orleans parish.

   a. The general equation for apportioning emissions to each parish is:

$$\text{Parish motorboat VOC emissions} = (A)\ \frac{B}{C}$$

where:

A = VOC emissions for district or study area.

B = No. of registered boats in the parish for which VOC emissions are being calculated.

C = Total number of registered boats in district or study area (Table C-12).

b. VOC emissions (tons/year) for Orleans parish are:

$$(4,180.9)\ \frac{13,272}{59,548} = 931.8$$

VOC emissions from pleasure, small commercial boats, and vessels by parish can be found in Table C-14.

4.2.3.4 Railroads

Railroad activities are classified into two general areas: (1) road-haul service and (2) railyard switching. VOC emissions are estimated based on the amount of fuel oil used by locomotives which is multiplied by the appropriate emission factor from AP-42.[4] Locomotive engines were assumed to have the following mix:*

Road-haul service:

two-stroke supercharged	47%
two-stroke turbocharged	47%
four-stroke turbocharged	6%

Railyard switching:

two-stroke supercharged	100%

Statewide fuel consumption data were obtained from the 1977 annual reports for class I and class II railroads by company.[29] These statewide totals (for each rail company) were then apportioned to parish by the amount of rail mileage each company operated in each parish. This assumes that all miles of rail for each company were traveled over equally. The miles of rail for each company by parish were obtained from a railroad transportation map of Louisiana.[30] It was assumed that the cities of New Orleans, Baton Rouge and Shreveport had significant railyard operations. Railyard switching activity was accounted for by doubling the fuel oil consumption in the following parishes: Orleans, Jefferson, East Baton Rouge, West Baton Rouge and Caddo.

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*Obtained from contact with railroad companies operating in the inventory area.

The general equation to calculate VOC emissions from locomotives is:

Railroad VOC Emissions (tons/year) = $FC \times M \div 1{,}000 \times E_f \times R \div 2{,}000$ #/ton

where:

FC* = Fuel oil consumption (gals/year) for road haul service and/or railyard switching (found in Table C-15).

M = Percent (in fraction form) of total population each engine category contributes.

1,000 = Converts fuel usage data to 1,000 gal. units

E_f = Emission factor from AP-42 in lbs/1,000 gals.[4]

R = Reactivity factor (used reactivity factor for motor vehicle diesel engines, 0.89).[6]

The VOC emissions (tons/year) from railroads for Orleans Parish are:

Road-haul service

1. Four-stroke turbocharged =

$$\left(\frac{2{,}490{,}000}{2}\right) \times 0.06 \div 1{,}000 \times 99 \times 0.89 \div 2{,}000 = \quad 3.3$$

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*In parishes where there are switching operations and road-haul service, the total fuel consumption (FC) is divided by two.

2. Two-stroke supercharged =

$$\left(\frac{2,490,000}{2}\right) \times 0.47 \div 1,000$$

$$\times\ 148 \times 0.89 \div 2,000 = \qquad 38.5$$

3. Two-stroke turbocharged =

$$\left(\frac{2,490,000}{2}\right) \times 0.47 \div 1,000$$

$$\times\ 190 \times 0.89 \div 2,000 = \qquad 7.3$$

Railyard switching

4. Two-stroke supercharged =

$$\left(\frac{2,490,000}{2}\right) \times 1.00 \div 1,000$$

$$\times\ 190 \times 0.89 \div 2,000 = \qquad \underline{105.3}$$

TOTAL 154.4

VOC emissions from railroads by parish can be found in Table C-15.

4.2.3.5 Other Off-highway Fuel Use

Other off-highway fuel users are classified into the following categories:

- Farm equipment
- Construction equipment
- Industrial equipment
- Lawn and garden equipment

The methodologies used for each of these and an example calculation are discussed in the following subsections. Orleans parish was not used in all the example calculations, since VOC emissions from certain source categories in this parish were negligible.

4.2.3.5.1 Farm Equipment

Farm equipment were subdivided into the five following areas:

- Combines
- Balers
- Harvesters
- Tractors
- General Purpose

VOC emissions were based on the population of equipment in each of the above categories. Equipment populations by parish were obtained from the Census of Agriculture for the years 1969 and 1974.[31] Population figures for 1977 were estimated by growth factors, which were based on historical growth trends. National figures, which were available in the guideline document,[1] were used for (1) the percentages of each type of equipment that were either gasoline or diesel powered, (2) fuel consumption rate (gal/hour) and (3) annual usage (hour/year).

The general equation for fuel consumption is:

Consumption (gal/yr) = EPOP x USAGE (hr/yr) x FUEL RATE (gal/hr)

where:

EPOP = Equipment population for each category.

USAGE = Annual usage for each category (from the guideline document).[1]

FUEL RATE = Fuel consumption rate for each type of equipment (from the guideline document)[1]

Fuel consumption by farm equipment for Calcasieu parish is:

GASOLINE POWERED EQUIPMENT

1. COMBINES = 182 x 71 x 2.34 = 30,237.5
2. BALERS = 56 x 24 x 2.34 = 3,145.0
3. HARVESTERS = 0 x 120 x 2.34 = 0.0
4. TRACTORS = 765 x 291 x 2.28 = 507,562.2
5. GENERAL PURPOSE = 712 x 50 x 3.51 = 124,956.0

DIESEL POWERED EQUIPMENT

1. COMBINES = 138 x 71 x 1.5 = 14,697.0
2. BALERS = 0 x 24 x 1.5 = 0.0
3. HARVESTERS = 8 x 120 x 1.5 = 1,440.0
4. TRACTORS = 353 x 490 x 2.98 = 515,450.6
5. GENERAL PURPOSE = 712 x 50 x 1.94 = 69,064.0

The general equation for calculation of VOC emissions is:

$$\text{VOC Emissions (tons/yr)} = FC \times E_f \times R \div 2{,}000\ \#/\text{ton}$$

where:

FC = Fuel consumption by fuel type (gasoline or diesel) for each category.

E_f* = Emission factor from AP-42.[4]

R** = Reactivity factor (gasoline = 0.86, diesel = 0.89 and Aldehydes = 1.00).[5]

VOC emissions for combines are:

$$\text{VOC (gasoline)} = (30.2375 \times 10^3\ \text{gal}) \left[(165.63\ \#/10^3\ \text{gal})(0.86) + 4.14\ \#/10^3\ \text{gal}\right] \div 2{,}000\ \#/\text{ton} = \quad 2.3\ \text{tons/year}$$

$$\text{VOC (diesel)} = (14.697 \times 10^3\ \text{gal}) \left[(57.1\ \#/10^3\ \text{gal})(0.89) + 10.2\ \#/10^3\ \text{gal}\right] \div 2{,}000\ \#/\text{ton} = \quad 0.5\ \text{tons/year}$$

Total VOC emissions for combines = 2.8 tons/year

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* Emission factors are given separately in AP-42[4] for HC and Aldehydes from gasoline and diesel powered engines. Therefore, the total emission factor is a combination of these two.

**Total reactive hydrocarbon emissions factor =

$$E_{f\ (HC)} \times R_{(HC)} + E_{f\ (aldehyde)} \times R_{(aldehyde)}$$

This procedure is repeated for the other four categories then summed to obtain total farm equipment VOC emissions. VOC emissions from farm equipment by parish can be found in Table C-16.

4.2.3.5.2 Construction Equipment

VOC emissions from construction equipment were estimated using fuel usage data. 1971 - 1975 off-highway gasoline use for Louisiana was obtained from the Department of Revenue.[32] This data was then projected (by linear regression) to obtain 1977 off-highway gasoline use (15,909,598 gals). It is estimated in Highway Statistics[8] that of the total off-highway gasoline used, 1.46% is by construction equipment (232,236 gals). The guideline document [1] indicates that 10.5 times as much diesel fuel is used for construction purposes as gasoline (2,438,478 gals).

These statewide fuel usage figures were then apportioned to the parishes on the basis of employment in SIC 16 (heavy construction).[16] VOC emissions (by parish) were calculated by multiplying the gasoline and diesel fuel consumed in each parish by the appropriate emission and reactivity factors.

Emission factors from AP-42[4] that were used for construction equipment are as follows:

Gasoline Powered Equipment - 1. HC = $130.168\ \#/10^3$ gal
2. Aldehydes = $4.44\ \#/10^3$ gal

Diesel Powered Equipment - 1. HC = $34.7\ \#/10^3$ gal
2. Aldehydes = $6.78\ \#/10^3$ gal

The reactivity factors were assumed to be 0.86 for gasoline, 0.89 for diesel and 1.00 for Aldehydes.[6]

The general equation for calculation of VOC emissions (tons/year) from construction equipment is:

$$\text{VOC Emissions (tons/year)} = \text{GAL} \times \text{EMP}_p \div \text{EMP}_s \left[(E_f \times R) + E_a\right] \div 2{,}000\ \#/\text{ton}$$

where:

GAL = Gasoline or diesel fuel consumption in 1,000 gallon units.

EMP_p = Parish employment in SIC 16.

EMP_s = State employment in SIC 16.

E_f = Emission factor for either gasoline or diesel powered equipment (from Ap-42).[4]

R = Reactivity factor for either gasoline or diesel fuels.

E_a (aldehydes) = Emission factor for Aldehydes from AP-42.[4]

VOC emissions (tons/year) for Orleans parish from construction equipment are:

1. Gasoline powered equipment =

$$(232.236\ 10^3\ \text{gal}) \left[\frac{3{,}387}{31{,}789}\right] \left[(130.168\ \#/10^3\ \text{gal})\ (0.86) + (4.44\ \#/10^3\ \text{gal})\right] \div 2{,}000\ \#/\text{ton} = \quad 1.5$$

2. Diesel powered equipment =

$$(2{,}438.478\ 10^3\ \text{gal}) \left[\frac{3{,}387}{31{,}789}\right] \left[(34.7\ \#/\text{ton})\ (0.89) + (6.78\ \#/10^3\ \text{gal})\right] \div 2{,}000\ \#/\text{ton} = \quad 4.9$$

TOTAL 6.4

VOC emissions (tons/year) by parish for construction equipment can be found in Table C-17.

4.2.3.5.3 Industrial Equipment

VOC emissions for industrial equipment (forklift, generators, pumps and miscellaneous machinery) were based on fuel consumption data obtained from the Louisiana Department of Natural Resources publication, Louisiana Energy Production and Consumption.[33] Fuel consumption data were available for the years 1973, 74 and 75. 1977 fuel consumption figures were approximated, from these three years, by a linear regression analysis.

State fuel consumption data were apportioned to each parish on the basis of employment in SICs 10 - 14, 20 - 39, 50 and 51 (found in County Business Patterns).[17] The emission factors (tons/year) from AP-42[4] used were:

Gasoline Powered Equipment - 1. HC = 132.2 $\#/10^3$ gals
2. Aldehydes = 4.36 $\#/10^3$ gals

Diesel Powered Equipment - 1. HC = 37.5 $\#/10^3$ gals
2. Aldehydes = 7.04 $\#/10^3$ gals

The reactivity factors used for HC emissions were (1) 0.86 for gasoline fuel and (2) 0.89 for diesel fuel.[6] All aldehyde emissions were assumed to be 100% reactive.

The general equation for VOC emissions (tons/year) from industrial equipment is:

$$\text{VOC emissions (tons/year)} = (\text{GAL} \times \text{EMP}_p \div \text{EMP}_s) \left[(E_f \times R) + E_a\right] \div 2{,}000 \text{ \#/ton}$$

where:

GAL = Fuel consumption in 1,000 gal units for either gasoline or diesel fuel.

EMP_p = Parish employment in SICs 10 - 14, 20 - 39, 50 and 51.[17]

EMP_s = State employment in SICs 10 - 14, 20 - 39, 50 and 51.[17]

E_f = Emission factor for HC emissions from either gasoline or diesel powered equipment.[4]

R = Reactivity factor for either gasoline or diesel fuel.

E_a = Emission factor for Aldehyde emissions.[4]

VOC emissions (tons/year) from industrial equipment for Orleans Parish are:

1. Gasoline =

$(42{,}247.8\ 10^3 \text{ gal}) \left[\frac{44{,}504}{303{,}520}\right]$

$(132.2\ \#/10^3 \text{ gal})\ (0.86)\ +$

$(4.36\ \#/10^3 \text{ gal})$

$\div\ 2{,}000\ \#/\text{ton} =$ 356.6

2. Diesel =

$(14{,}469\ 10^3 \text{ gal}) \left[\frac{44{,}504}{303{,}520}\right]$

$(37.5\ \#/10^3 \text{ gal})\ (0.89)\ +$

$(7.04\ \#/10^3 \text{ gal})$

$\div\ 2{,}000\ \#/\text{ton} =$ 42.9

TOTAL 408.5

VOC emissions (tons/year) by parish from industrial equipment can be found in Table C-18.

4.2.3.5.4 Lawn and Garden Equipment

VOC emissions from lawn and garden equipment were based on the number of owner occupied houses in each parish; this assumes that each housing unit has one lawnmower. Owner occupied housing data were taken from the 1976 Louisiana Almanac.[34]

Assuming that all the engines used in lawn and garden equipment are four-stroke, the emission factors from AP-42 [3] are:

1. Exhaust and evaporative combined = 3.76 lb/unit year for hydrocarbons.
2. Aldehydes = 0.07 lb/unit year.

Hydrocarbon emissions were assumed to be 95% (from Mobile Source Emission Factors [22] for four-stroke motorcycle engines) and aldehydes 100% reactive respectively.

The general equation to calculate VOC emissions from lawn and garden equipment is:

$$\text{VOC (tons/year)} = H \times E_f \times R \div 2{,}000\ \#/\text{ton} + H + E_a \times 2{,}000\ \#/\text{ton}$$

where:

H = Owner occupied housing units.

E_f = Exhaust and evaporative emission factor for hydrocarbons.

R = Reactivity factor for hydrocarbons.

E_a = Aldehyde emission factor.

VOC emissions (tons/year) from lawn and garden equipment for Orleans Parish are:

$$\text{VOC (tons/year)} = (73{,}517)\ (3.76\ \text{lb/unit year})\ (0.95) \div 2{,}000\ \text{\#/ton} + (73{,}517)\ (0.07\ \text{lb/unit year}) \div 2{,}000\ \text{\#/ton} = 133.9$$

VOC emissions (tons/year) from lawn and garden equipment by parish can be found in Table C-19.

SECTION 5

RESULTS

This section presents a compilation of emissions from each subcategory of sources in each of the nineteen parishes included in the emission inventory. The parishes are listed in alphabetical order for the Southern Louisiana - Southeast Texas AQCR first, and then the two parishes in the Shreveport - Texarkana - Tyler AQCR.

The blank spaces on the tables indicate that emissions from that source category were not applicable to that parish because of the nonexistence of the sources. For those categories in which sources were applicable but did not have any emissions, they are reported as zero. Background information for the data presented in this section is found in Appendix A, B, and C for stationary point sources, stationary area sources, and mobile sources, respectively.

TABLE 5-1. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS ASCENSION PARISH

		VOC EMISSIONS (TONS/YEAR)			
STATIONARY SOURCES		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	735.4			735.4
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		167.8		167.8
	SERVICE STATION UNLOADING		130.3		130.3
	AVIATION GASOLINE HANDLING		0.4		0.4
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	5,666.7			5,666.7
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	5,080.1			5,080.1
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	TRANSPORTATION EQUIPMENT		0.0		0.0
	AUTOMOBILES		0.0		0.0
	CANS		0.0		0.0
	METAL COILS				
	PAPER		0.0		0.0
	FABRIC		16.6		16.6
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		0.0		0.0
	OTHER METAL PRODUCTS		17.7		17.7
	OTHERS		0.0		0.0
NON INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		67.8		67.8
	AUTO REFINISHING		0.0		0.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		4.3		4.3
	DRY CLEANING		11.5		11.5
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		27.7		27.7
	OTHER SOLVENT USE		518.9		518.9
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		1.0		1.0
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		11,482.2	964.0		12,446.2
MOBILE SOURCES	HIGHWAY VEHICLES			3,224.2	
	OFF-HIGHWAY VEHICLES			66.6	
	RAIL			24.7	
	AIRCRAFT			1.3	
	VESSELS AND PLEASURE CRAFT			290.9	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				3,607.7	3,607.7
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		11,482.2	964.0	3,607.7	16,053.9

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-2. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS BEAUREGARD PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	469.4			469.4
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		70.7		70.7
	SERVICE STATION UNLOADING		54.9		54.9
	AVIATION GASOLINE HANDLING		0.8		0.8
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	0.1			0.1
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		0.0		0.0
	CANS		0.0		0.0
	METAL COILS				
	PAPER		75.2		75.2
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		16.7		16.7
	OTHER METAL PRODUCTS		0.0		0.0
	OTHERS		0.0		0.0
NON INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		1.5		1.5
	AUTO REFINISHING		0.0		0.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		0.0		0.0
	DRY CLEANING		7.3		7.3
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		30.5		30.5
	OTHER SOLVENT USE		244.2		244.2
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		431.3		431.3
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		470.5	933.1		1,403.6
MOBILE SOURCES	HIGHWAY VEHICLES			1,588.8	
	OFF-HIGHWAY VEHICLES			73.2	
	RAIL			91.3	
	AIRCRAFT			5.8	
	VESSELS AND PLEASURE CRAFT			134.9	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				1,895.8	1,895.8
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		470.5	933.1	1,895.8	3,299.4

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-3. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS
CALCASIEU PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	17,775.0			17,775.0
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	73.6			73.6
	GASOLINE & CRUDE OIL STORAGE[1]	3,766.9			3,766.9
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS	157.5	775.2		932.7
	BULK GASOLINE TERMINALS[2]	551.2			551.2
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		648.8		648.8
	SERVICE STATION UNLOADING		503.4		503.4
	AVIATION GASOLINE HANDLING		3.7		3.7
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	9,782.9			9,782.9
	PAINT MANUFACTURE	72.2			72.2
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE	2,149.0			2,149.0
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	607.0			607.0
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		0.0		0.0
	CANS		0.0		0.0
	METAL COILS				
	PAPER		28.2		28.2
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		33.4		33.4
	OTHER METAL PRODUCTS		19.4		19.4
	OTHERS		40.5		40.5
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		57.8		57.8
	AUTO REFINISHING		28.4		28.4
	OTHERS				
OTHER SOLVENT USE	DEGREASING		4.3		4.3
	DRY CLEANING		46.8		46.8
	GRAPHIC ARTS		73.8		73.8
	ADHESIVES				
	CUTBACK ASPHALT		38.8		38.8
	OTHER SOLVENT USE		1,526.2		1,526.2
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		82.0		82.0
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		34,936.0	3,910.7		38,846.7
MOBILE SOURCES	HIGHWAY VEHICLES			6,557.3	
	OFF-HIGHWAY VEHICLES			250.6	
	RAIL			112.7	
	AIRCRAFT			27.9	
	VESSELS AND PLEASURE CRAFT			1,078.9	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				7,999.5	7,999.5
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		34,936.0	3,910.7	7,999.5	46,846.2

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-4. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS EAST BATON ROUGE PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	21,353.0			21,353.0
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	123.8			123.8
	GASOLINE & CRUDE OIL STORAGE[1]	4.0			4.0
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS		413.4		413.4
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		1,207.9		1,207.9
	SERVICE STATION UNLOADING		937.3		937.3
	AVIATION GASOLINE HANDLING		6.6		6.6
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	24,986.7			24,986.7
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE	652.0			652.0
	RUBBER PRODUCTS MANUFACTURE	192.9			192.9
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	10.0			10.0
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		8.1		8.1
	MAGNET WIRE		38.9		38.9
	TRANSPORTATION EQUIPMENT		8.1		8.1
	CANS		0.0		0.0
	METAL COILS				
	PAPER		178.7		178.7
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		44.1		44.1
	OTHER METAL PRODUCTS		126.9		126.9
	OTHERS		77.1		77.1
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		355.1		355.1
	AUTO REFINISHING		68.6		68.6
	OTHERS				
OTHER SOLVENT USE	DEGREASING	15.0	28.7		43.7
	DRY CLEANING		3,153.1		3,153.1
	GRAPHIC ARTS		270.2		270.2
	ADHESIVES				
	CUTBACK ASPHALT		32.9		32.9
	OTHER SOLVENT USE		3,754.5		3,754.5
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		1.6		1.6
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		47,337.4	10,711.8		58,049.2
MOBILE SOURCES	HIGHWAY VEHICLES			17,900.4	
	OFF-HIGHWAY VEHICLES			392.6	
	RAIL			128.6	
	AIRCRAFT			71.3	
	VESSELS AND PLEASURE CRAFT			1,462.0	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				19,954.9	19,954.9
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		47,337.4	10,711.8	19,954.9	78,004.1

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-5. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS GRANT PARISH

		VOC EMISSIONS (TONS/YEAR)			
STATIONARY SOURCES		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		41.6		41.6
	SERVICE STATION UNLOADING		32.3		32.3
	AVIATION GASOLINE HANDLING		0.0		0.0
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	476.5			476.5
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		0.0		0.0
	CANS		0.0		0.0
	METAL COILS				
	PAPER		0.0		0.0
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		15.2		15.2
	OTHER METAL PRODUCTS		0.0		0.0
	OTHERS		0.0		0.0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		0.0		0.0
	AUTO REFINISHING		0.0		0.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		0.0		0.0
	DRY CLEANING		1.1		1.1
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		28.4		28.4
	OTHER SOLVENT USE		122.1		122.1
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		33.9		33.9
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		476.5	274.6		751.1
MOBILE SOURCES	HIGHWAY VEHICLES			1,270.0	
	OFF-HIGHWAY VEHICLES			31.6	
	RAIL			61.8	
	AIRCRAFT			0.1	
	VESSELS AND PLEASURE CRAFT			106.9	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				1,470.4	1,470.4
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		476.5	274.6	1,470.4	2,221.5

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-6. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS IBERVILLE PARISH

		VOC EMISSIONS (TONS/YEAR)			
STATIONARY SOURCES		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	21.0			21.0
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		106.0		106.0
	SERVICE STATION UNLOADING		82.2		82.2
	AVIATION GASOLINE HANDLING		0.1		0.1
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	4,744.1			4,744.1
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE	93.0			93.0
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	748.4			748.4
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		0.0		0.0
	CANS	43.0	0.0		43.0
	METAL COILS				
	PAPER		0.0		0.0
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		7.6		7.6
	OTHER METAL PRODUCTS		26.5		26.5
	OTHERS		0.0		0.0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		16.2		16.2
	AUTO REFINISHING		0.0		0.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		6.4		6.4
	DRY CLEANING		8.3		8.3
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		24.4		24.4
	OTHER SOLVENT USE		457.8		457.8
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		1.7		1.7
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		5,649.5	737.2		6,386.7
MOBILE SOURCES	HIGHWAY VEHICLES			1,987.5	
	OFF-HIGHWAY VEHICLES			78.8	
	RAIL			23.0	
	AIRCRAFT			0.3	
	VESSELS AND PLEASURE CRAFT			241.0	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				2,330.6	2,330.6
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		5,649.5	737.2	2,330.6	8,717.3

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-7. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS
JEFFERSON PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	8.5			8.5
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	2.1			2.1
	GASOLINE & CRUDE OIL STORAGE[1]	5,790.0			5,790.0
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS		500.0		500.0
	BULK GASOLINE TERMINALS[2]	1,202.7			1,202.7
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		1,311.4		1,311.4
	SERVICE STATION UNLOADING		1,017.6		1,017.6
	AVIATION GASOLINE HANDLING		28.1		28.1
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	15,087.9			15,087.9
	PAINT MANUFACTURE	13.8			13.8
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	37.0			37.0
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		48.5		48.5
	MAGNET WIRE		7.8		7.8
	TRANSPORTATION EQUIPMENT		776.9		776.9
	CANS		6.7		6.7
	METAL COILS				
	PAPER				
	FABRIC				
	METAL FURNITURE				
	WOOD FURNITURE		11.9		11.9
	FLAT WOOD PRODUCTS		19.7		19.7
	OTHER METAL PRODUCTS	98.4	342.0		440.4
	OTHERS	15.8	154.4		170.2
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		204.8		204.8
	AUTO REFINISHING		83.6		83.6
	OTHERS				
OTHER SOLVENT USE	DEGREASING		321.7		321.7
	DRY CLEANING		210.8		210.8
	GRAPHIC ARTS		206.7		206.7
	ADHESIVES				
	CUTBACK ASPHALT		17.8		17.8
	OTHER SOLVENT USE		1,159.9		1,159.9
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		0.0		0.0
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		22,256.2	6,430.3		28,686.5
MOBILE SOURCES	HIGHWAY VEHICLES			11,237.0	
	OFF-HIGHWAY VEHICLES			451.4	
	RAIL			85.1	
	AIRCRAFT			415.9	
	VESSELS AND PLEASURE CRAFT			1,658.9	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				13,848.3	13,848.3
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		22,256.2	6,430.3	13,848.3	42,534.8

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-8. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS LAFAYETTE PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		504.9		504.9
	SERVICE STATION UNLOADING		391.8		391.8
	AVIATION GASOLINE HANDLING		6.4		6.4
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	1.2			1.2
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		6.4		6.4
	CANS		0.0		0.0
	METAL COILS				
	PAPER		23.5		23.5
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		9.1		9.1
	OTHER METAL PRODUCTS		77.5		77.5
	OTHERS		16.1		16.1
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		97.3		97.3
	AUTO REFINISHING		5.0		5.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		21.6		21.6
	DRY CLEANING		45.3		45.3
	GRAPHIC ARTS		61.0		61.0
	ADHESIVES				
	CUTBACK ASPHALT		25.7		25.7
	OTHER SOLVENT USE		1,159.9		1,159.9
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		0.5		0.5
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		1.2	2,452.0		2,453.2
MOBILE SOURCES	HIGHWAY VEHICLES			4,485.2	
	OFF-HIGHWAY VEHICLES			203.2	
	RAIL			44.4	
	AIRCRAFT			93.3	
	VESSELS AND PLEASURE CRAFT			514.4	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				5,340.5	5,340.5
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		1.2	2,452.0	5,340.5	7,793.7

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-9. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS LAFOURCHE PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	1.7			1.7
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		222.2		222.2
	SERVICE STATION UNLOADING		172.3		172.3
	AVIATION GASOLINE HANDLING		0.1		0.1
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		80.6		80.6
	CANS		0.0		0.0
	METAL COILS				
	PAPER		23.5		23.5
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		0.0		0.0
	OTHER METAL PRODUCTS		19.4		19.4
	OTHERS		0.0		0.0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		22.1		22.1
	AUTO REFINISHING		5.0		5.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		36.7		36.7
	DRY CLEANING		15.6		15.6
	GRAPHIC ARTS		16.0		16.0
	ADHESIVES				
	CUTBACK ASPHALT		30.0		30.0
	OTHER SOLVENT USE		671.6		671.6
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		2.5		2.5
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		1.7	1,317.6		1,319.3
MOBILE SOURCES	HIGHWAY VEHICLES			3,254.6	
	OFF-HIGHWAY VEHICLES			114.9	
	RAIL			41.6	
	AIRCRAFT			2.2	
	VESSELS AND PLEASURE CRAFT			654.7	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				4,068.0	4,068.0
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		1.7	1,317.6	4,068.0	5,387.3

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-10. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS ORLEANS PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS		0.2		0.2
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		1,305.1		1,305.1
	SERVICE STATION UNLOADING		1,012.8		1,012.8
	AVIATION GASOLINE HANDLING		7.6		7.6
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	771.2			771.2
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		27.2		27.2
	TRANSPORTATION EQUIPMENT		515.9		515.9
	CANS	932.9	40.3		973.2
	METAL COILS				
	PAPER				
	FABRIC				
	METAL FURNITURE				
	WOOD FURNITURE		16.5		16.5
	FLAT WOOD PRODUCTS		28.9		28.9
	OTHER METAL PRODUCTS	0.8	229.1		229.9
	OTHERS	8.0	263.7		271.7
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		361.0		361.0
	AUTO REFINISHING		182.3		182.3
	OTHERS				
OTHER SOLVENT USE	DEGREASING		237.1		237.1
	DRY CLEANING		1,580.4		1,580.4
	GRAPHIC ARTS		871.8		871.8
	ADHESIVES	12.0			12.0
	CUTBACK ASPHALT		13.5		13.5
	OTHER SOLVENT USE		5,586.0		5,586.0
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		0.0		0.0
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		1,724.9	12,279.4		14,004.3
MOBILE SOURCES	HIGHWAY VEHICLES			15,237.0	
	OFF-HIGHWAY VEHICLES			548.8	
	RAIL			193.6	
	AIRCRAFT			38.8	
	VESSELS AND PLEASURE CRAFT			964.9	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				16,983.1	16,983.1
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		1,724.9	12,279.4	16,983.1	30,987.4

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-11. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS POINTE COUPEE PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	8.7			8.7
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		70.7		70.7
	SERVICE STATION UNLOADING		54.9		54.9
	AVIATION GASOLINE HANDLING		0.3		0.3
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		0.0		0.0
	CANS		0.0		0.0
	METAL COILS				
	PAPER		0.0		0.0
	FABRIC		6.0		6.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		9.1		9.1
	OTHER METAL PRODUCTS		0.0		0.0
	OTHERS		0.0		0.0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		3.0		3.0
	AUTO REFINISHING		0.0		0.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		0.0		0.0
	DRY CLEANING		3.3		3.3
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		30.9		30.9
	OTHER SOLVENT USE		183.1		183.1
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		0.6		0.6
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		8.7	361.9		370.6
MOBILE SOURCES	HIGHWAY VEHICLES			1,311.8	
	OFF-HIGHWAY VEHICLES			69.8	
	RAIL			75.6	
	AIRCRAFT			0.8	
	VESSELS AND PLEASURE CRAFT			87.6	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				1,545.6	1,545.6
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		8.7	361.9	1,545.6	1,916.2

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-12. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS
ST. BERNARD PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	13,319.9			13,319.9
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	34.2			34.2
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS		550.0		550.0
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		180.5		180.5
	SERVICE STATION UNLOADING		140.1		140.1
	AVIATION GASOLINE HANDLING		0.0		0.0
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	10.2			10.2
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		17.8		17.8
	CANS		0.0		0.0
	METAL COILS				
	PAPER		0.0		0.0
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		7.6		7.6
	OTHER METAL PRODUCTS		26.5		26.5
	OTHERS		0.0		0.0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		8.9		8.9
	AUTO REFINISHING		5.0		5.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		10.8		10.8
	DRY CLEANING		14.0		14.0
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		5.9		5.9
	OTHER SOLVENT USE		732.6		732.6
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		0.0		0.0
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		13,364.3	1,699.7		15,064.0
MOBILE SOURCES	HIGHWAY VEHICLES			3,091.0	
	OFF-HIGHWAY VEHICLES			59.2	
	RAIL			0.1	
	AIRCRAFT			0.2	
	VESSELS AND PLEASURE CRAFT			406.0	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				3,556.5	3,556.5
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		13,364.3	1,699.7	3,556.5	18,620.5

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-13. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS ST. CHARLES PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR) STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	13,289.3			13,289.3
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	59.0			59.0
	GASOLINE & CRUDE OIL STORAGE[1]	4,711.2			4,711.2
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]	7,018.0			7,018.0
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		98.5		98.5
	SERVICE STATION UNLOADING		76.4		76.4
	AVIATION GASOLINE HANDLING		0.3		0.3
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	11,895.3			11,895.3
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING	72.0			72.0
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE	317.0			317.0
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	121.0			121.0
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		0.0		0.0
	CANS		0.0		0.0
	METAL COILS				
	PAPER		0.0		0.0
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		0.0		0.0
	OTHER METAL PRODUCTS		0.0		0.0
	OTHERS		17.7		17.7
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		28.0		28.0
	AUTO REFINISHING		0.0		0.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		4.3		4.3
	DRY CLEANING		9.0		9.0
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		13.3		13.3
	OTHER SOLVENT USE		518.9		518.9
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		0.1		0.1
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		37,482.8	757.5		38,240.3
MOBILE SOURCES	HIGHWAY VEHICLES			2,450.2	
	OFF-HIGHWAY VEHICLES			48.9	
	RAIL			47.9	
	AIRCRAFT			0.9	
	VESSELS AND PLEASURE CRAFT			277.5	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				2,825.4	2,825.4
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		37,482.8	757.5	2,825.4	41,065.7

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-14. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS ST. JAMES PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	3,022.8			3,022.8
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]	769.4			769.4
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		54.2		54.2
	SERVICE STATION UNLOADING		42.1		42.1
	AVIATION GASOLINE HANDLING		0.0		0.0
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	66.5			66.5
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	122.0	0.0		122.0
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		0.0		0.0
	CANS		0.0		0.0
	METAL COILS				
	PAPER		0.0		0.0
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		0.0		0.0
	OTHER METAL PRODUCTS		0.0		0.0
	OTHERS		0.0		0.0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		1.5		1.5
	AUTO REFINISHING		0.0		0.0
	OTHERS		0.0		0.0
OTHER SOLVENT USE	DEGREASING		0.0		0.0
	DRY CLEANING		3.3		3.3
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		9.7		9.7
	OTHER SOLVENT USE		366.3		366.3
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		1.8		1.8
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		3,980.7	478.9		4,459.6
MOBILE SOURCES	HIGHWAY VEHICLES			1,057.6	
	OFF-HIGHWAY VEHICLES			60.7	
	RAIL			28.0	
	AIRCRAFT			0.0	
	VESSELS AND PLEASURE CRAFT			176.6	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				1,322.9	1,322.9
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		3,980.7	478.9	1,322.9	5,782.5

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-15. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS
ST. JOHN THE BAPTIST PARISH

		VOC EMISSIONS (TONS/YEAR)			
STATIONARY SOURCES		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	5,501.2			5,501.2
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		74.5		74.5
	SERVICE STATION UNLOADING		57.8		57.8
	AVIATION GASOLINE HANDLING		0.1		0.1
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	387.6			387.6
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	0.2			0.2
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		0.0		0.0
	CANS		0.0		0.0
	METAL COILS				
	PAPER		0.0		0.0
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		0.0		0.0
	OTHER METAL PRODUCTS		0.0		0.0
	OTHERS		0.0		0.0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		3.0		3.0
	AUTO REFINISHING		0.0		0.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		0.0		0.0
	DRY CLEANING		3.3		3.3
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		11.0		11.0
	OTHER SOLVENT USE		335.8		335.8
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		0.6		0.6
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		5,889.0	486.1		6,375.1
MOBILE SOURCES	HIGHWAY VEHICLES			2,250.1	
	OFF-HIGHWAY VEHICLES			37.8	
	RAIL			29.6	
	AIRCRAFT			0.3	
	VESSELS AND PLEASURE CRAFT			157.8	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				2,475.6	2,475.6
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		5,889.0	486.1	2,475.6	8,850.7

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-16. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS ST. MARY PARISH

		VOC EMISSIONS (TONS/YEAR)			
STATIONARY SOURCES		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS	1,393.7			1,393.7
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		207.0		207.0
	SERVICE STATION UNLOADING		160.6		160.6
	AVIATION GASOLINE HANDLING		2.1		2.1
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	11,385.2			11,385.2
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		91.8		91.8
	CANS		0.0		0.0
	METAL COILS				
	PAPER		10.9		10.9
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		0.0		0.0
	OTHER METAL PRODUCTS	48.7	218.6		267.3
	OTHERS	101.2	12.8		114.0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		14.8		14.8
	AUTO REFINISHING		11.7		11.7
	OTHERS				
OTHER SOLVENT USE	DEGREASING		79.9		79.9
	DRY CLEANING		14.0		14.0
	GRAPHIC ARTS		30.1		30.1
	ADHESIVES				
	CUTBACK ASPHALT		16.9		16.9
	OTHER SOLVENT USE		793.6		793.6
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		3.0		3.0
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		12,827.6	1,667.8		14,495.4
MOBILE SOURCES	HIGHWAY VEHICLES			2,628.2	
	OFF-HIGHWAY VEHICLES			70.5	
	RAIL			83.0	
	AIRCRAFT			22.4	
	VESSELS AND PLEASURE CRAFT			541.3	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				3,345.4	3,345.4
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		12,827.6	1,667.8	3,345.4	17,840.8

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-17. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS WEST BATON ROUGE PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	1,016.6			1,016.6
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]	75.0			75.0
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS		911.6		911.6
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		66.9		66.9
	SERVICE STATION UNLOADING		51.9		51.9
	AVIATION GASOLINE HANDLING		0.0		0.0
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	47.9			47.9
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE	152.7			152.7
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	2,531.2			2,531.2
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		38.7		38.7
	CANS		0.0		0.0
	METAL COILS				
	PAPER		0.0		0.0
	FABRIC		0.0		0.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		0.0		0.0
	OTHER METAL PRODUCTS		0.0		0.0
	OTHERS		0.0		0.0
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		1.5		1.5
	AUTO REFINISHING		0.0		0.0
	OTHERS				
OTHER SOLVENT USE	DEGREASING		10.8		10.8
	DRY CLEANING		3.3		3.3
	GRAPHIC ARTS		0.0		0.0
	ADHESIVES				
	CUTBACK ASPHALT		15.3		15.3
	OTHER SOLVENT USE		183.1		183.1
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		0.8		0.8
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		3,823.4	1,283.9		5,107.3
MOBILE SOURCES	HIGHWAY VEHICLES			3,084.0	
	OFF-HIGHWAY VEHICLES			32.9	
	RAIL			71.0	
	AIRCRAFT			0.1	
	VESSELS AND PLEASURE CRAFT			114.8	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				3,302.8	3,302.8
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		3,823.4	1,283.9	3,302.8	8,410.1

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-18. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS BOSSIER PARISH

STATIONARY SOURCES		VOC EMISSIONS (TONS/YEAR)			
		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	23.1			23.1
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]	162.6			162.6
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		252.4		252.4
	SERVICE STATION UNLOADING		195.9		195.9
	AVIATION GASOLINE HANDLING		3.5		3.5
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	4.8			4.8
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	0.4			0.4
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		0.0		0.0
	MAGNET WIRE		0.0		0.0
	TRANSPORTATION EQUIPMENT		6.4		6.4
	CANS		0.0		0.0
	METAL COILS				
	PAPER		17.3		17.3
	FABRIC		6.0		6.0
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS	35.0	50.1		85.1
	OTHER METAL PRODUCTS	123.5	26.5		150.0
	OTHERS		33.7		33.7
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		48.6		48.6
	AUTO REFINISHING		16.7		16.7
	OTHERS				
OTHER SOLVENT USE	DEGREASING		13.0		13.0
	DRY CLEANING		9.9		9.9
	GRAPHIC ARTS		45.9		45.9
	ADHESIVES				
	CUTBACK ASPHALT		30.7		30.7
	OTHER SOLVENT USE		641.0		641.0
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		82.5		82.5
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		349.4	1,480.1		1,829.5
MOBILE SOURCES	HIGHWAY VEHICLES			4,018.6	
	OFF-HIGHWAY VEHICLES			86.2	
	RAIL			69.4	
	AIRCRAFT			785.8	
	VESSELS AND PLEASURE CRAFT			364.0	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				5,324.0	5,324.0
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		349.4	1,480.1	5,324.0	7,153.5

[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

TABLE 5-19. SUMMARY OF VOLATILE ORGANIC COMPOUND EMISSIONS CADDO PARISH

		VOC EMISSIONS (TONS/YEAR)			
STATIONARY SOURCES		STATIONARY POINT SOURCE EMISSIONS	STATIONARY AREA SOURCE EMISSIONS	MOBILE SOURCE EMISSIONS	TOTAL BASE YEAR EMISSIONS 1977
PETROLEUM REFINERIES	REFINERY FUGITIVES (LEAKS)				
	MISCELLANEOUS SOURCES A. PROCESS DRAINS AND WASTE B. VACUUM PRODUCING SYSTEMS C. PROCESS UNIT BLOWDOWN	1,209.0			1,209.0
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]	606.7			606.7
	SHIP AND BARGE TRANSFER OF GASOLINE, CRUDE OIL, AND CHEMICALS				
	BULK GASOLINE TERMINALS[2]				
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING		807.8		807.8
	SERVICE STATION UNLOADING		626.8		626.8
	AVIATION GASOLINE HANDLING		4.4		4.4
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	7.7			7.7
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	4.5			4.5
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES		22.3		22.3
	MAGNET WIRE	37.1			37.1
	TRANSPORTATION EQUIPMENT		14.5		14.5
	CANS		0.0		0.0
	METAL COILS				
	PAPER		105.0		105.0
	FABRIC		43.7		43.7
	METAL FURNITURE				
	WOOD FURNITURE		0.0		0.0
	FLAT WOOD PRODUCTS		38.0		38.0
	OTHER METAL PRODUCTS	1.2	484.9		486.1
	OTHERS	231.1	101.3		332.4
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS		119.3		119.3
	AUTO REFINISHING		68.6		68.6
	OTHERS				
OTHER SOLVENT USE	DEGREASING	76.0	233.0		309.0
	DRY CLEANING		989.1		989.1
	GRAPHIC ARTS		242.9		242.9
	ADHESIVES				
	CUTBACK ASPHALT		42.2		42.2
	OTHER SOLVENT USE		3,235.6		3,235.6
OTHER MISCELLANEOUS	FUEL COMBUSTION				
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING		116.4		116.4
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		2,173.3	7,295.8		9,468.1
MOBILE SOURCES	HIGHWAY VEHICLES			14,737.2	
	OFF-HIGHWAY VEHICLES			391.7	
	RAIL			296.6	
	AIRCRAFT			113.6	
	VESSELS AND PLEASURE CRAFT			1,044.0	
TOTAL VOC EMISSIONS FROM MOBILE SOURCES				16,583.1	16,583.1
TOTAL VOLATILE ORGANIC COMPOUND EMISSIONS		2,173.3	7,295.8	16,583.1	26,052.2

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[1] INCLUDES ALL STORAGE FACILITIES EXCEPT THOSE AT SERVICE STATIONS AND BULK PLANTS.

[2] EMISSIONS FROM LOADING TANK TRUCKS AND RAIL CARS.

[3] EMISSIONS FROM STORAGE AND TRANSFER OPERATIONS.

APPENDIX A

STATIONARY POINT SOURCE EMISSIONS

TABLE A-1. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

BOSSIER PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
ASHLAND CHEMICAL COMPANY	4.4
ASPHALT MATERIALS, INCORPORATED	0.4
BARKSDALE AIR FORCE BASE	80.8
CADDO DOOR AND VENEER COMPANY	35.0
CALUMET REFINING COMPANY	23.1
GYM DANDY, INCORPORATED	71.7
HALLIBURTON SERVICES	0.4
P & H TUBE CORPORATION	51.8
TEXAS EASTERN TRANSMISSION CORPORATION	81.8
TOTAL	349.4

TABLE A-2. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

CADDO PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
ATHENS BRICK COMPANY	0.2
ATLAS PROCESSING COMPANY	979.0
BAYOU STATE OIL CORPORATION	153.0
BEAIRD-POULAN COMPANY GREENWOOD PLANT	1.2
BEAIRD-POULAN COMPANY LUCAS PLANT	76.0
CITIES SERVICE	230.0
EXXON PIPELINE	416.0
GENERAL ELECTRIC COMPANY	37.1
GOULD, INCORPORATED	3.2
IDA GASOLINE COMPANY	37.7
OWENS-ILLINOIS, INCORPORATED	4.3
UOP PROVESSING DIVISION	7.7
WESTERN ELECTRIC	227.9
TOTAL	2,173.3

TABLE A-3. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

ASCENSION PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
ALLIED CHEMICAL COMPANY	10.0
BASF CHEMICAL	572.0
CF INDUSTRIES	5,060.0
MELAMINE CHEMICALS	4.5
MENOCHEM, INCORPORATED	455.0
ORMET CORPORATION	20.1
RUBICON CHEMICALS	70.4
SHELL CHEMICAL COMPANY	642.5
SHELL OIL COMPANY	280.4
TRIAD CHEMICAL	52.0
UNIROYAL CHEMICAL DIVISION	1,885.0
VULCAN MATERIALS	2,430.3
TOTAL	11,482.2

TABLE A-4. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

BEAUREGARD PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
INTERNATIONAL PAPER COMPANY	1.1
WESTVACO, INCORPORATED	469.4
TOTAL	470.5

TABLE A-5. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

CALCASIEU PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
ADMIRAL PAINT COMPANY	72.2
AMOCO PRODUCTION COMPANY	2.0
CERTAIN-TEED PRODUCTS	300.9
CITIES SERVICE OIL COMPANY LAKE CHARLES REFINERY	15,518.0
CITIES SERVICE OIL COMPANY LOADING FACILITIES	157.5
CITIES SERVICE PIPELINE COMPANY CLIFTON RIDGE TERMINAL	1,906.4
CONTINENTAL OIL COMPANY CONTINENTAL CARBON COMPANY	607.0
CONTINENTAL OIL COMPANY CONOCO CHEMICALS PLANT	1,480.0
CONTINENTAL OIL COMPANY CONOCO VCM PLANT	4,488.9
CONTINENTAL OIL COMPANY GILLIS GAS PROCESSING PLANT	71.6
CONTINENTAL OIL COMPANY (LAKE CHARLES CONTINENTAL PIPELINE COMPANY)	471.7
CONTINENTAL OIL COMPANY WESTLAKE REFINERY	2,257.0
CONTINENTAL OIL COMPANY (WESTLAKE PETROLEUM PRODUCT TERMINAL)	79.5
DAVISON CHEMICAL DIVISION	0.5
FIRESTONE SYNTHETIC RUBBER AND LATEX COMPANY	2,149.0
HERCULES, INCORPORATED	2,396.0

TABLE A-5. (CONCLUDED)

CALCASIEU PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
MOBIL OIL COMPANY TERMINAL	98.0
OLIN CORPORATION	244.7
PPG INDUSTRIES, INCORPORATED	872.4
PAKTANK	1,762.0
TOTAL	34,936.0

TABLE A-6. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

EAST BATON ROUGE PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
ALLIED CHEMICAL COMPANY NORTH WORKS	6,408.0
ALLIED CHEMICAL COMPANY POLYOLEFINS PLANT	783.3
ALLIED CHEMCIAL COMPANY SOUTH WORKS	900.0
ASHLAND CHEMICAL COMPANY	3.0
COPOLYMER RUBBER & CHEMICAL CORPORATION	493.0
BROWNING-FERRIS INDUSTRIES	10.0
ETHYL CORPORATION	7,116.0
EXXON CHEMICAL COMPANY, U.S.A.	8,477.0
EXXON CHEMICAL COMPANY, U.S.A. BATON ROUGE PLASTICS PLANT	652.0
EXXON COMPANY, U.S.A. BATON ROUGE REFINERY	21,353.0
FOSTER GRANT COMPANY	158.4
GRANT CHEMICAL DIVISION	26.8
HERCULES, INCORPORATED	166.2
MOBIL OIL COMPANY	192.9
PORT ALLEN MARINE SERVICE, INCORPORATED	15.0
REALEX CORPORATION	6.0
SHELL OIL COMPANY	123.8

TABLE A-6. (CONCLUDED)

EAST BATON ROUGE PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
SHELL PIPE LINE CORPORATION	4.0
UNIROYAL CHEMICAL COMPANY SCOTTS BLUFF PLANT	797.7
TOTAL	47,337.4

TABLE A-7. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

GRANT PARISH

SOURCE		1977 VOC EMISSIONS (TONS/YEAR)
FARMLAND INDUSTRIES, INCORPORATED		476.5
	TOTAL	476.5

TABLE A-8. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

IBERVILLE PARISH

SOURCE		1977 VOC EMISSIONS (TONS/YEAR)
AIR PRODUCTS AND CHEMICALS, INCORPORATED		10.9
CIBA-GEIGY CORPORATION		651.8
COSDEN OIL AND CHEMICAL COMPANY		39.2
DOW CHEMICAL COMPANY		4,471.5
GEORGIA PACIFIC CORPORATION		222.5
GOODYEAR TIRE AND RUBBER COMPANY		93.0
NORDIX COMPANY		81.6
GREIF BROTHERS CORPORATION		43.0
HERCULES, INCORPORATED		15.0
SHELL OIL COMPANY BAYOU GOULA PLANT		21.0
	TOTAL	5,649.5

TABLE A-9. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

JEFFERSON PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
AMERADA HESS CORPORATION	5,790.0
AMERICAN CYANAMID CORPORATION	14,781.0
AMF TUBOSCOPE, INCORPORATED	1.0
AVONDALE SHIPYARDS, INCORPORATED AVONDALE SHIPYARDS	12.0
AVONDALE SHIPYARDS, INCORPORATED HARVEY DIVISION	2.8
BROWNING FERRIS INDUSTRIES, INCORPORATED	0.1
CELOTEX CORPORATION	34.2
COMMERCIAL SOLVENTS CORPORATION	179.0
DELTA STEEL FORM AND FABRICATING COMPANY, INCORPORATED	0.6
EXXON COMPANY U.S.A. GRAND ISLE GAS PLANT	2.0
JOHNS-MANVILLE CORPORATION	2.7
NOLA TERMINAL	731.7
PAKTANK CORPORATION WESTWEGO TERMINAL	471.0
PLEXCO	18.8
SIGMA COATINGS, INCORPORATED	13.8
TEXACO, INCORPORATED SOUTH LAKE ARTHUR GAS PROCESSING PLANT	0.1
TIMMUS REFINING COMPANY	8.5

TABLE A-9. (CONCLUDED)

JEFFERSON PARISH

	1977 VOC EMISSIONS (TONS/YEAR)
U. S. STEEL PRODUCTS DIVISION	79.0
WITCO CHEMICAL CORPORATION	127.9
TOTAL	22,256.2

TABLE A-10. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

LAFAYETTE PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
BILLEAUD SUGAR FACTORY	0.2
PELTIER BROTHERS, INCORPORATED	1.0
TOTAL	1.2

TABLE A-11. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

LAFOURCHE PARISH

SOURCE		1977 VOC EMISSIONS (TONS/YEAR)
AMOCO PRODUCTION COMPANY		1.6
TENNESSEE GAS PIPELINE COMPANY LEEVILLE STATION		0.1
	TOTAL	1.7

TABLE A-12. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

ORLEANS PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
AIR PRODUCTS AND CHEMICALS, INCORPORATED	762.0
FOLGER COFFEE COMPANY	9.0
ALLIS-CHALMERS CORPORATION	5.0
AMERICAN CAN COMPANY	458.0
AMERICAN METAL, INCORPORATED	0.8
*CONTINENTAL CAN COMPANY - CLOSED 11-77	319.0
FLINTKOTE COMPANY	12.0
INLAND STEEL CONTAINER COMPANY	155.9
JOHNCKE SERVICE, INCORPORATED	3.0
OWENS-ILLINOIS	0.2
TOTAL	1,724.9

*EMISSIONS FOR 11 MONTHS = 319

TABLE A-13. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

POINTE COUPEE PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
TEXACO, INCORPORATED FORDOCHE GAS PROCESSING	8.7
TOTAL	8.7

TABLE A-14. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

ST. BERNARD PARISH

SOURCE		1977 VOC EMISSIONS (TONS/YEAR)
KAISER ALUMINUM AND CHEMICAL		10.2
MURPHY OIL COMPANY		4,227.9
SHELL OIL COMPANY TOCA PROCESSING PLANT		18.0
SHELL OIL COMPANY YSCLOSKY PROCESSING PLANT		16.2
TENNECO OIL COMPANY		9,092.0
	TOTAL	13,364.3

TABLE A-15. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

ST. CHARLES PARISH

SOURCE		1977 VOC EMISSIONS (TONS/YEAR)
ARGUS CHEMICAL CORPORATION		8.7
BUNGE CORPORATION VEGETABLE OIL DIVISION		72.0
GATX GOOD HOPE TERMINAL		4,711.2
GOOD HOPE REFINERIES, INCORPORATED		2,229.5
HOOKER CHEMICALS AND PLASTICS CORPORATION		8.9
INTERNATIONAL MATEX TANK TERMINALS		7,018.0
INTERNATIONAL PROCESSORS		57.8
KAISER ALUMINUM AND CHEMICAL		121.0
MONSANTO COMPANY		1,216.7
SHELL CHEMICAL COMPANY NORCO PLANT		5,609.0
SHELL CHEMICAL COMPANY PLASTICS PLANT		317.0
SHELL OIL COMPANY NORCO REFINERY		11,002.0
TEXACO, INCORPORATED PARADISE GAS PROCESSING PLANT		59.0
UNION CARBIDE CORPORATION		5,052.0
	TOTAL	37,482.8

TABLE A-16. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

ST. JAMES PARISH

SOURCE		1977 VOC EMISSIONS (TONS/YEAR)
EXXON PIPELINE COMPANY		27.4
GULF OIL CHEMICALS		66.5
KAISER ALUMINUM AND CHEMICAL CORPORATION		122.0
LA JET ST. JAMES OIL REFINERY		132.8
SHELL PIPELINE CORPORATION		742.0
TEXACO, INCORPORATED		2,890.0
	TOTAL	3,980.7

TABLE A-17. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

ST. JOHN THE BAPTIST PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
BAYOU STEEL	0.2
BOSWELL OIL MT. AIRY REFINERY	461.2
E. I. DuPONT DE NEMOURS COMPANY	383.3
MARATHON OIL COMPANY	5,040.0
NALCO CHEMICAL COMPANY	4.3
TOTAL	5,889.0

TABLE A-18. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

ST. MARY PARISH

SOURCE	1977 VOC EMISSIONS (TONS/YEAR)
ASHLAND CHEMICAL COMPANY	7,290.0
CABOT CORPORATION	2,330.6
CAMERON IRON WORKS	8.5
CITIES SERVICE	1,756.0
EXXON COMPANY U.S.A. GARDEN CITY GAS PLANT	2.1
PLASTIC APPLICATORS	48.7
SEACOAST PRODUCTS	0.1
SHELL OIL COMPANY CALUMET PLANT	1,380.6
TEXACO, INCORPORATED FLOODWAY GAS PROCESSING PLANT	11.0
TOTAL	12,827.6

TABLE A-19. POINT SOURCE VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

WEST BATON ROUGE PARISH

SOURCE		1977 VOC EMISSIONS (TONS/YEAR)
COMMUNITY COFFEE COMPANY		6.4
COPOLYMER RUBBER AND CHEMICAL COMPANY		152.7
FIRESTONE PLASTICS		47.9
PETROLEUM FUEL AND TERMINAL COMPANY		73.5
PLACID REFINING		1,016.6
ROGERS TERMINAL AND SHIPPING		1.5
SID RICHARDSON CARBON COMPANY		2,524.8
	TOTAL	3,823.4

APPENDIX B

STATIONARY AREA SOURCE EMISSIONS

TABLE B-1. SERVICE STATION GASOLINE HANDLING EMISSIONS[a]

PARISH		UNDERGROUND TANK FILLING EMISSIONS (TONS/YEAR)	UNDERGROUND TANK BREATHING EMISSIONS (TONS/YEAR)	VEHICLE REFUELING EMISSIONS (TONS/YEAR)	SPILLAGE EMISSIONS (TONS/YEAR)	TOTAL VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR						
ASCENSION		154.4	13.4	120.9	9.4	298.1
BEAUREGARD		65.0	5.7	50.9	4.0	125.6
CALCASIEU		596.9	51.9	467.1	36.3	1,152.2
EAST BATON ROUGE		1,111.3	96.6	869.7	67.6	2,145.2
GRANT		38.3	3.3	30.0	2.3	73.9
IBERVILLE		97.5	8.5	76.3	5.9	188.2
JEFFERSON		1,206.5	104.9	944.2	73.4	2,329.0
LAFAYETTE		464.5	40.4	363.5	28.3	896.7
LAFOURCHE		204.4	17.8	159.9	12.4	394.5
ORLEANS		1,200.7	104.4	939.7	73.1	2,317.9
POINTE COUPEE		65.0	5.7	50.9	4.0	125.6
ST. BERNARD		166.1	14.4	130.0	10.1	320.6
ST. CHARLES		90.6	7.9	70.9	5.5	174.9
ST. JAMES		49.9	4.3	39.1	3.0	96.3
ST. JOHN THE BAPTIST		68.5	6.0	53.6	4.2	132.3
ST. MARY		190.4	16.6	149.0	11.6	367.6
WEST BATON ROUGE		61.5	5.4	48.2	3.7	118.8
	TOTAL	5,831.5	507.2	4,563.9	354.8	11,257.4
SHREVEPORT - TEXARKANA - TYLER AQCR						
BOSSIER		232.2	20.2	181.8	14.1	448.3
CADDO		743.2	64.6	581.6	45.2	1,434.6
	TOTAL	975.4	84.8	763.4	59.3	1,882.9

(a) BASED ON STATE GASOLINE SALES AS PROVIDED BY THE LOUISIANA DEPARTMENT OF REVENUE AND TAXATION.

TABLE B-2. COMMERCIAL AIRPORT FUEL HANDLING EMISSIONS[a]

		VOC EMISSIONS (TONS/YEAR)		
AIRPORT/PARISH	1977 AVIATION GAS USE (GAL.)	STORAGE TANK WORKING LOSSES	AIRCRAFT FILLING LOSSES	TOTAL
LAKE CHARLES/CALCASIEU	462,000	----	2.2	2.2
NEW ORLEANS/JEFFERSON	2,600,000	13.0[a]	12.6	25.6
LAFAYETTE/LAFAYETTE	644,881	----	3.1	3.1
BATON ROUGE/EAST BATON ROUGE	529,737	----	2.6	2.6
SHREVEPORT/CADDO	500,000	----	2.4	2.4

[a] ONLY AIRPORT KNOWN TO HAVE BULK STORAGE FACILITIES

TABLE B-3. NON-COMMERCIAL AIRPORT FUEL HANDLING EMISSIONS (a)

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		0.4
BEAUREGARD		0.8
CALCASIEU		1.5
EAST BATON ROUGE		4.0
GRANT		0.0
IBERVILLE		0.1
JEFFERSON		2.5
LAFAYETTE		3.3
LAFOURCHE		0.1
ORLEANS		7.6
POINTE COUPEE		0.3
ST. BERNARD		0.0
ST. CHARLES		0.3
ST. JAMES		0.0
ST. JOHN THE BAPTIST		0.1
ST. MARY		2.1
WEST BATON ROUGE		0.0
	TOTAL	23.1
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		3.5
CADDO		2.0
	TOTAL	5.5

(a) FUEL CONSUMPTION DATA TAKEN FROM "HIGHWAY STATISTICS," SECTION 1, U.S. DEPARTMENT OF TRANSPORTATION, FHWA-HP-HS-75-01R.

TABLE B-4 SHIP AND BARGE LOADING EMISSIONS

PORT	1977 VOC EMISSIONS (TONS/YEAR)
Baton Rouge	1325.0
Lake Charles	775.2
New Orleans	1050.2

TABLE B-5. DRY CLEANING EMISSIONS[a]

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		11.5
BEAUREGARD		7.3
CALCASIEU		46.8
EAST BATON ROUGE		3,153.1*
GRANT		1.1
IBERVILLE		8.3
JEFFERSON		210.8
LAFAYETTE		45.3
LAFOURCHE		15.6
ORLEANS		1,580.4*
POINTE COUPEE		3.3
ST. BERNARD		14.0
ST. CHARLES		9.0
ST. JAMES		3.3
ST. JOHN THE BAPTIST		3.3
ST. MARY		14.0
WEST BATON ROUGE		3.3
	TOTAL	5,130.4
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		9.9
CADDO		829.3*
	TOTAL	839.2

[a] SOLVENT CONSUMPTION BASED ON "METHODOLOGIES FOR COUNTYWIDE ESTIMATION OF COAL, GAS, AND ORGANIC SOLVENT CONSUMPTION," EPA 450/3-75-086, DECEMBER, 1975.

* INCLUDES INDUSTRIAL PLANTS.

TABLE B-6. DEGREASING SOLVENT EMISSIONS [a]

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		4.3
BEAUREGARD		0.0
CALCASIEU		4.3
EAST BATON ROUGE		28.7
GRANT		0.0
IBERVILLE		6.4
JEFFERSON		321.7
LAFAYETTE		21.6
LAFOURCHE		36.7
ORLEANS		237.1
POINTE COUPEE		0.0
ST. BERNARD		10.8
ST. CHARLES		4.3
ST. JAMES		0.0
ST. JOHN THE BAPTIST		0.0
ST. MARY		79.9
WEST BATON ROUGE		10.8
	TOTAL	766.6
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		13.0
CADDO		233.0
	TOTAL	246.0

[a] SOLVENT CONSUMPTION BASED ON "METHODOLOGIES FOR COUNTYWIDE ESTIMATION OF COAL, GAS, AND ORGANIC SOLVENT CONSUMPTION," EPA-450/3-75-086, DECEMBER, 1975.

TABLE B-7. AREA SOURCE SURFACE COATING EMISSIONS[(a)]

PARISH	INDUSTRIAL SURFACE COATING										NON-INDUSTRIAL SURFACE COATING		TOTAL
	LARGE APPLIANCES	MAGNETIC WIRE	TRANSPORTATION EQUIPMENT	CANS	PAPER	FABRIC	WOOD FURNITURE	FLAT WOOD PRODUCTS	OTHER METAL PRODUCTS	OTHERS	ARCHITECTURAL COATINGS	AUTO REFINISHING	
SOUTHERN LOUISIANA - S.E. TEXAS AQCR													
ASCENSION	0	0	0	0	0	16.6	0	0	17.7	0	67.8	0	102.1
BEAUREGARD	0	0	0	0	75.2	0	0	16.7	0	0	1.5	0	93.4
CALCASIEU	0	0	0	0	28.2	0	0	33.4	19.4	40.5	67.8	28.4	217.7
EAST BATON ROUGE	8.1	38.9	8.1	0	178.7	0	0	44.1	126.9	77.1	355.1	68.6	905.6
GRANT	0	0	0	0	0	0	0	15.2	0	0	0	0	15.2
IBERVILLE	0	0	0	0	0	0	0	7.6	26.5	0	16.2	0	50.3
JEFFERSON	48.5	7.8	776.9	6.7	0	0	11.9	19.7	342.0	154.4	204.8	83.6	1,656.3
LAFAYETTE	0	0	6.4	0	23.5	0	0	9.1	77.5	16.1	97.3	5.0	234.9
LAFOURCHE	0	0	80.6	0	23.5	0	0	0	19.4	0	22.1	5.0	150.6
ORLEANS	0	27.2	515.9	40.3	0	0	16.5	28.9	229.1	263.7	361.0	182.3	1,664.9
POINTE COUPEE	0	0	0	0	0	6.0	0	9.1	0	0	3.0	0	18.1
ST. BERNARD	0	0	17.8	0	0	0	0	7.6	26.5	0	8.9	5.0	65.8
ST. CHARLES	0	0	0	0	0	0	0	0	0	17.7	28.0	0	45.7
ST. JAMES	0	0	0	0	0	0	0	0	0	0	1.5	0	1.5
ST. JOHN THE BAPTIST	0	0	0	0	0	0	0	0	0	0	3.0	0	3.0
ST. MARY	0	0	91.8	0	10.9	0	0	0	218.6	12.8	14.8	11.7	360.6
WEST BATON ROUGE	0	0	38.7	0	0	0	0	0	0	0	1.5	0	40.2
TOTAL	56.6	73.9	1,536.2	47.0	340.0	22.6	28.4	191.4	1,103.6	582.3	1,254.3	389.6	5,625.9

(a) SOLVENT CONSUMPTION BASED ON "METHODOLOGIES FOR COUNTYWIDE ESTIMATION OF COAL, GAS, AND ORGANIC SOLVENTS CONSUMPTION," EPA-450/3-75-086, DECEMBER, 1975.

TABLE B-7. (Concluded)

PARISH	INDUSTRIAL SURFACE COATING										NON-INDUSTRIAL SURFACE COATING		TOTAL
	LARGE APPLIANCES	MAGNETIC WIRE	TRANSPORTATION EQUIPMENT	CANS	PAPER	FABRIC	WOOD FURNITURE	FLAT WOOD PRODUCTS	OTHER METAL PRODUCTS	OTHERS	ARCHITECTURAL COATINGS	AUTO REFINISHING	
SHREVEPORT - TEXARKANA - TYLER AQCR													
BOSSIER	0	0	6.4	0	17.3	6.0	0	50.1	26.5	33.7	48.6	16.7	205.3
CADDO	22.3	0	14.5	0	105.0	43.7	0	38.0	484.9	101.3	119.3	68.6	997.6
TOTAL	22.3	0	20.9	0	122.3	49.7	0	88.1	511.4	135.0	167.9	85.3	1,202.9

(a) SOLVENT CONSUMPTION BASED ON "METHODOLOGIES FOR COUNTYWIDE ESTIMATION OF COAL, GAS, AND ORGANIC SOLVENTS CONSUMPTION," EPA-450/3-75-086, DECEMBER, 1975.

TABLE B-8. PRINTING AND PUBLISHING EMISSIONS [a]

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		0.0
BEAUREGARD		0.0
CALCASIEU		73.8
EAST BATON ROUGE		270.2
GRANT		0.0
IBERVILLE		0.0
JEFFERSON		206.7
LAFAYETTE		61.0
LAFOURCHE		16.0
ORLEANS		871.8
POINTE COUPEE		0.0
ST. BERNARD		0.0
ST. CHARLES		0.0
ST. JAMES		0.0
ST. JOHN THE BAPTIST		0.0
ST. MARY		30.1
WEST BATON ROUGE		0.0
	TOTAL	1,529.6
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		45.9
CADDO		242.9
	TOTAL	288.8

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[a] SOLVENT CONSUMPTION BASED ON "METHODOLOGIES FOR COUNTYWIDE ESTIMATION OF COAL, GAS, AND ORGANIC SOLVENT CONSUMPTION," EPA-450/3-75-086, DECEMBER, 1975.

TABLE B-9. OTHER SOLVENT USE EMISSIONS (a)

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		518.9
BEAUREGARD		244.2
CALCASIEU		1,526.2
EAST BATON ROUGE		3,754.5
GRANT		122.1
IBERVILLE		457.8
JEFFERSON		3,754.5
LAFAYETTE		1,159.9
LAFOURCHE		671.6
ORLEANS		5,586.0
POINTE COUPEE		183.1
ST. BERNARD		732.6
ST. CHARLES		518.9
ST. JAMES		366.3
ST. JOHN THE BAPTIST		335.8
ST. MARY		793.6
WEST BATON ROUGE		183.1
	TOTAL	20,909.1
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		641.0
CADDO		3,235.6
	TOTAL	3,876.6

(a) SOLVENT CONSUMPTION BASED ON "METHODOLOGIES FOR COUNTYWIDE ESTIMATION OF COAL, GAS, AND ORGANIC SOLVENT CONSUMPTION," EPA-450/3-75-086, DECEMBER, 1975.

TABLE B-10. CUTBACK ASPHALT PAVING EMISSIONS [a]

PARISH		VOC EMISSIONS[b] (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		27.7
BEAUREGARD		30.5
CALCASIEU		38.8
EAST BATON ROUGE		32.9
GRANT		28.4
IBERVILLE		24.4
JEFFERSON		17.8
LAFAYETTE		25.7
LAFOURCHE		30.0
ORLEANS		13.5
POINTE COUPEE		30.9
ST. BERNARD		5.9
ST. CHARLES		13.3
ST. JAMES		9.7
ST. JOHN THE BAPTIST		11.0
ST. MARY		16.9
WEST BATON ROUGE		15.3
	TOTAL	372.7
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		30.7
CADDO		42.2
	TOTAL	72.9

[a] ESTIMATE OF VOLUME OF CUTBACK ASPHALT USE PROVIDED BY LOUISIANA DEPARTMENT OF HIGHWAYS.

[b] EMISSION FACTORS DERIVED FROM "PROCEDURES FOR THE PREPARATION OF EMISSION INVENTORIES FOR VOLATILE ORGANIC COMPOUNDS," VOLUME I, EPA-450/2-77-028.

TABLE B-11. FOREST FIRE EMISSIONS (a)

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		0.0
BEAUREGARD		431.3
CALCASIEU		82.0
EAST BATON ROUGE		1.6
GRANT		33.9
IBERVILLE		0.0
JEFFERSON		0.0
LAFAYETTE		0.0
LAFOURCHE		0.0
ORLEANS		0.0
POINTE COUPEE		0.0
ST. BERNARD		0.0
ST. CHARLES		0.0
ST. JAMES		0.0
ST. JOHN THE BAPTIST		0.0
ST. MARY		0.0
WEST BATON ROUGE		0.0
	TOTAL	548.8
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		82.5
CADDO		116.4
	TOTAL	198.9

(a) BASED ON FOREST FIRE DATA PROVIDED BY THE LOUISIANA FORESTRY COMMISSION.

TABLE B-12. AGRICULTURAL BURNING EMISSIONS [a]

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		1.0
BEAUREGARD		0.0
CALCASIEU		0.0
EAST BATON ROUGE		0.0
GRANT		0.0
IBERVILLE		1.7
JEFFERSON		0.0
LAFAYETTE		0.5
LAFOURCHE		2.5
ORLEANS		0.0
POINTE COUPEE		0.6
ST. BERNARD		0.0
ST. CHARLES		0.1
ST. JAMES		1.8
ST. JOHN THE BAPTIST		0.6
ST. MARY		3.0
WEST BATON ROUGE		0.8
	TOTAL	12.6
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		0.0
CADDO		0.0
	TOTAL	0.0

[a] BASED ON AREAS OF AGRICULTURAL FIELDS BURNED DURING 1977.

APPENDIX C

MOBILE SOURCE EMISSIONS

TABLE C-1. 1977 VOC EMISSIONS FOR MOTOR VEHICLES BY PARISH

PARISH	GROWTH FACTOR*		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR			
ASCENSION	1.11		3,224.2
BEAUREGARD	1.02		1,588.8
CALCASIEU	1.03		6,557.3
EAST BATON ROUGE	1.04		17,900.4
GRANT	1.02		1,270.0
IBERVILLE	1.10		1,987.5
JEFFERSON	1.02		10,819.9
LAFAYETTE	1.05		4,485.2
LAFOURCHE	0.98		3,254.6
ORLEANS	1.05		15,237.0
POINTE COUPEE	0.91		1,311.8
ST. BERNARD	1.06		3,091.0
ST. CHARLES	1.03		2,450.2
ST. JAMES	1.05		1,057.6
ST. JOHN THE BAPTIST	1.08		2,250.1
ST. MARY	1.04		2,628.2
WEST BATON ROUGE	1.06		3,086.0
		TOTAL	82,199.8
SHREVEPORT - TEXARKANA - TYLER AQCR			
BOSSIER	1.03		4,018.6
CADDO	1.05		14,737.2
		TOTAL	18,755.8

* BASED ON VMT DATA OBTAINED FROM THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT FOR THE YEARS 1972 TO 1976.

TABLE C-2. MOTOR VEHICLE EMISSION FACTORS AND VMT FOR 1976[a]

PARISH	AVERAGE ROADWAY SPEEDS (MPH) 30	37	46.8	51.8	53.1	54.1	55.8
SOUTHERN LOUISIANA-S.E. TEXAS AQCR							
ASCENSION							
EMISSION FACTOR	9.43	8.12	8.02	7.89	7.86	7.85	7.31
VMT	7,770	210,306	25,489	233,886	337,181	0	160,292
BEAUREGARD							
EMISSION FACTOR	9.25	8.45	7.91	7.78	7.74	7.73	7.21
VMT	4,966	101,733	56,862	71,091	283,307	0	0
CALCASIEU							
EMISSION FACTOR	9.45	8.62	8.06	7.93	7.90	7.89	7.35
VMT	165,690	334,654	233,512	109,064	356,682	369,324	521,361
EAST BATON ROUGE							
EMISSION FACTOR	9.39	8.56	7.99	7.87	7.82	7.83	7.28
VMT	1,138,750	341,448	1,926,942	151,318	247,541	1,544,855	148,618
GRANT							
EMISSION FACTOR	9.75	8.94	8.31	8.17	8.12	8.14	7.57
VMT	0	83,521	0	78,920	232,754	0	0
IBERVILLE							
EMISSION FACTOR	9.52	8.69	8.12	7.99	7.94	7.95	7.39
VMT	3,927	123,453	31,829	156,895	102,733	0	178,632
JEFFERSON							
EMISSION FACTOR	9.24	8.41	7.87	7.76	7.69	7.70	7.16
VMT	735,477	13,665	1,704,651	40,010	27,277	919,873	0

[a] EMISSION FACTORS FROM MOBILE SOURCE EMISSIONS MODEL AND VMT DATA FROM LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT.

TABLE C-2. (Continued)

PARISH	AVERAGE ROADWAY SPEEDS (MPH) 30	37	46.8	51.8	53.1	54.1	55.8
SOUTHERN LOUISIANA-S.E. TEXAS AQCR (CONT'D)							
LAFAYETTE							
EMISSION FACTOR	9.05	8.26	7.74	7.61	7.58	7.57	7.05
VMT	135,724	204,048	454,941	142,682	266,308	99,144	127,921
LAFOURCHE							
EMISSION FACTOR	9.13	8.34	7.80	7.68	7.65	7.63	7.11
VMT	4,749	393,200	42,876	29,046	635,675	0	0
ORLEANS							
EMISSION FACTOR	9.74	8.88	8.30	8.18	8.15	8.12	7.56
VMT	695,144	0	1,679,818	0	46,985	1,825,037	303,050
POINTE COUPEE							
EMISSION FACTOR	9.49	8.66	8.09	7.96	7.95	7.92	7.38
VMT	0	125,062	0	48,043	292,904	0	0
ST. BERNARD							
EMISSION FACTOR	9.88	9.01	8.42	8.29	8.27	8.24	7.66
VMT	155,557	17,357	532,300	0	30,207	152,142	0
ST. CHARLES							
EMISSION FACTOR	9.28	8.46	7.90	7.79	7.78	7.75	7.20
VMT	0	82,722	0	160,903	387,760	0	179,645

(a) EMISSION FACTORS FROM MOBILE SOURCE EMISSIONS MODEL AND VMT DATA FROM LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT.

TABLE C-2. (Concluded)

PARISH	AVERAGE ROADWAY SPEEDS (MPH) 30	37	46.8	51.8	53.1	54.1	55.8
SOUTHERN LOUISIANA-S.E. TEXAS AQCR (CONT'D)							
ST. JAMES							
EMISSION FACTOR	9.23	8.43	7.88	7.77	7.61	7.72	7.18
VMT	0	33,937	0	118,874	113,427	0	80,506
ST. JOHN THE BAPTIST							
EMISSION FACTOR	9.40	8.58	8.01	7.90	7.87	7.85	7.31
VMT	4,882	29,516	73,330	85,020	295,828	0	218,961
ST. MARY							
EMISSION FACTOR	8.96	8.15	7.63	7.54	7.49	7.48	6.98
VMT	5,256	235,519	90,944	94,865	437,776	0	0
WEST BATON ROUGE							
EMISSION FACTOR	9.73	8.87	8.28	8.15	8.11	8.11	7.54
VMT	66,923	119,481	98,590	20,987	367,542	79,148	178,711
SHREVEPORT-TEXARKANA-TYLER AQCR							
BOSSIER							
EMISSION FACTOR	9.54	8.71	8.15	8.02	7.97	7.97	7.42
VMT	96,910	141,672	283,845	79,542	282,623	232,110	142,985
CADDO							
EMISSION FACTOR	9.60	8.77	8.20	8.07	8.02	8.03	7.48
VMT	1,092,204	311,721	1,308,607	40,189	421,248	1,066,046	99,508

(a) EMISSION FACTORS FROM MOBILE SOURCE EMISSIONS MODEL AND VMT DATA FROM LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT.

TABLE C-3. 1976 VOC EMISSIONS FOR MOTOR VEHICLES BY PARISH

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		3,077
BEAUREGARD		1,650
CALCASIEU		6,744
EAST BATON ROUGE		18,233
GRANT		1,319
IBERVILLE		1,914
JEFFERSON		11,237
LAFAYETTE		4,525
LAFOURCHE		3,518
ORLEANS		15,372
POINTE COUPEE		1,527
ST. BERNARD		3,089
ST. CHARLES		2,520
ST. JAMES		1,067
ST. JOHN THE BAPTIST		2,207
ST. MARY		2,677
WEST BATON ROUGE		3,084
	TOTAL	83,760
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		4,133
CADDO		14,868
	TOTAL	19,001

TABLE C-4. LANDING AND TAKE-OFF (LTO) CYCLES FOR 1977 BY AIRCRAFT TYPE[(a)]

	AIR CARRIER				BUSINESS JET	GENERAL AVIATION		HELICOPTER		MILITARY	
	JUMBO JET	LONG RANGE JET	MEDIUM RANGE JET	AIR CARRIER TURBOPROP		TURBOPROP	PISTON	PISTON	TURBINE	JET	PISTON
SOUTHERN LOUISIANA - S.E. TEXAS AQCR											
ASCENSION	0	0	0	0	0	0	7,727*	0	0	0	0
BEAUREGARD	0	0	0	1,181	0	0	12,996	217	1,228	0	0
CALCASIEU	0	0	2,179	2,449	1,404	0	26,278	359	0	251	0
EAST BATON ROUGE	0	0	7,585	4,062	1,219	0	70,301	101	101	202	202
GRANT	0	0	0	0	0	0	816*	0	0	0	0
IBERVILLE	0	0	0	0	0	0	1,631*	0	0	0	0
JEFFERSON	0	0	23,877	11,939	408*	408*	42,003*	2,281**	1,873**	0	0
LAFAYETTE	0	0	6,539	15,949	0	0	57,255	0	0	0	0
LAFOURCHE	0	0	0	0	0	0	0	1,000	7,600	0	0
ORLEANS	0	0	0	453	2,843	0	132,403	0	1,786	1,191	0
POINTE COUPEE	0	0	0	0	0	0	4,486*	408*	0	0	0
ST. BERNARD	0	0	0	0	0	0	408*	408*	0	0	0
ST. CHARLES	0	0	0	0	0	0	5,709*	0	0	0	0
ST. JAMES	0	0	0	0	0	0	0	0	0	0	0
ST. JOHN THE BAPTIST	0	0	0	0	0	0	1,631	408*	0	0	0
ST. MARY	0	0	2,000	2,000	0	0	36,000	408*	2,447*	0	0
WEST BATON ROUGE	0	0	0	0	0	0	408*	0	0	0	0

(a) LTO CYCLES WERE ACQUIRED BY PERSONAL CONTACT WITH EACH AIRPORT IN THE PARISH. DATA THAT COULD NOT BE ATTAINED BY PERSONAL CONTACT WAS ESTIMATED FROM FAA REPORTS

* ESTIMATED FROM THE NUMBER OF REGISTERED AIRCRAFT PER PARISH AVAILABLE FROM THE "CENSUS OF U.S. CIVIL AIRCRAFT 1975," FAA.

** ESTIMATED FROM PERSONAL CONTACT AND DATA IN THE "CENSUS OF U.S. CIVIL AIRCRAFT 1975,: FAA.

TABLE C-4. (Concluded)

	AIR CARRIER				BUSINESS JET	GENERAL AVIATION		HELICOPTER		MILITARY	
	JUMBO JET	LONG RANGE JET	MEDIUM RANGE JET	AIR CARRIER TURBOPROP		TURBOPROP	PISTON	PISTON	TURBINE	JET	PISTON
SHREVEPORT - TEXARKANA - TYLER AQCR											
BOSSIER	0	0	0	0	2,922	0	60,907	0	100	38,487	0
CADDO	0	0	13,084	5,015	0	0	35,476*	0	0	1,187	0

* ESTIMATED FROM THE NUMBER OF REGISTERED AIRCRAFT PER PARISH AVAILABLE FROM THE "CENSUS OF U.S. CIVIL AIRCRAFT 1975," FAA.

TABLE C-5. EMISSION AND GROWTH FACTORS PER AIRCRAFT LANDING - TAKEOFF CYCLE

AIRCRAFT	AVERAGE ANNUAL[a] GROWTH FACTOR 1975-1977	THC EMISSION FACTOR	
		(LB/ENGINE)	(KG/ENGINE)
JUMBO JET	1.002	12.2	5.5
LONG RANGE JET	1.002	41.2	18.7
MEDIUM RANGE JET	1.002	4.9	2.2
AIR CARRIER TURBOPROP	1.099	2.9	1.3
BUSINESS JET	1.057	3.6	1.6
GENERAL AVIATION TURBOPROP	1.057	1.1	0.5
GENERAL AVIATION PISTON	1.057	0.40	0.18
PISTON TRANSPORT	-----	40.7	18.5
HELICOPTER	1.057	0.52	0.24
MILITARY TRANSPORT	1.013	2.7	1.2
MILITARY JET	1.013	9.93	4.5
MILITARY PISTON	1.013	20.4	9.3

(a) AVERAGE ANNUAL GROWTH FACTORS FOR THE YEARS 1975-1977 WERE OBTAINED FROM THE "FAA AVIATION FORECASTS FISCAL YEARS 1978-1989."

TABLE C-6. AIRCRAFT VOC EMISSIONS FOR 1977 BY PARISH

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		1.3
BEAUREGARD		5.8
CALCASIEU		27.9
EAST BATON ROUGE		71.3
GRANT		0.1
IBERVILLE		0.3
JEFFERSON		415.9
LAFAYETTE		93.3
LAFOURCHE		2.2
ORLEANS		38.8
POINTE COUPEE		0.8
ST. BERNARD		0.2
ST. CHARLES		0.9
ST. JAMES		0.0
ST. JOHN THE BAPTIST		0.3
ST. MARY		22.4
WEST BATON ROUGE		0.1
	TOTAL	681.6
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		785.8
CADDO		113.6
	TOTAL	889.4

TABLE C-7. 1977 VOC EMISSIONS FOR VESSELS[a]

PARISH	1976 VOC EMISSIONS (TONS/YEAR)	GROWTH FACTOR[b] FOR 1977	1977 VOC EMISSIONS (TONS/YEAR)
ASCENSION	40.7	1.0499	42.7
CALCASIEU	11.8	1.0096	11.9
EAST BATON ROUGE	24.3	1.0499	25.5
IBERVILLE	58.6	1.0499	61.5
JEFFERSON	46.0	1.0446*	48.1
ST. BERNARD	16.7	1.0394	17.4
ST. CHARLES	38.8	1.0499	40.7
ST. JAMES	53.3	1.0499	56.0
ST. JOHN THE BAPTIST	31.0	1.0499	32.5
ORLEANS	31.8	1.0408	33.1
WEST BATON ROUGE	28.6	1.0499	30.0

(a) FOR PARISHES IN SOUTHERN LOUISIANA - S.E. TEXAS AQCR.

(b) BASED ON PORT ACTIVITY (FOR LAKE CHARLES, BATON ROUGE AND NEW ORLEANS) FROM 1963 - 1976. SOURCE, WATERBORNE COMMERCE OF THE U.S., PART 2.

* SINCE JEFFERSON PARISH HAS EMISSIONS BASED ON TWO PORT AREAS (NEW ORLEANS AND BATON ROUGE), THE GROWTH FACTOR WAS BASED ON ACTIVITY IN THESE TWO PORTS.

TABLE C-8. NUMBER OF SELF-PROPELLED VESSELS ENTERING PORT DURING 1976[a]

PORT	PASSENGER AND DRY CARGO	TANKER	TOWBOAT OR TUGBOAT
BATON ROUGE			
INBOUND	709	533	10
OUTBOUND	729	588	11
TOTAL	1,438	1,121	21
NEW ORLEANS			
INBOUND	3,156	984	64
OUTBOUND	3,575	1,010	65
TOTAL	6,731	1,994	129
LAKE CHARLES			
INBOUND	144	282	2
OUTBOUND	194	339	2
TOTAL	338	621	4

(a)THESE ARE FOR SELF-PROPELLED BOATS WITH DRAFTS GREATER THAN 18 FEET. SOURCE, WATERBORNE COMMERCE OF THE U.S., PART 2.

TABLE C-9. IN PORT FUEL CONSUMPTION FOR 1976

	VESSELS IN PORT	AVERAGE[a] STAY (DAYS)	VESSEL[b] DAYS IN PORT	FUEL CONSUMPTION GALS.[c] DISTILLATE	RESIDUAL
*BATON ROUGE					
PASSENGER & CARGO	1,438	3	4,314	1,138,896	4,917,960
TANKER	1,121	1.25	1,401	369,864	1,597,140
TUG	21	2.5	53	13,860	60,420
*NEW ORLEANS					
PASSENGER & CARGO	6,731	3	20,193	5,330,952	23,020,020
TANKER	1,994	1.25	2,493	658,152	2,842,020
TUG	129	2.5	323	85,140	368,220
LAKE CHARLES					
PASSENGER & CARGO	338	3	1,014	267,696	1,155,960
TANKER	621	1.25	776	204,864	884,640
TUG	4	2.5	10	2,640	11,400

(a) AVERAGE STAY IN PORT = DATA OBTAINED FROM NEW ORLEANS PORT AUTHORITY.

(b) VESSEL DAYS IN PORT = VESSELS IN PORT X AVERAGE STAY IN PORT.

(c) DISTILLATE = (VESSEL DAYS IN PORT) (.40) (660 GALS/DAY).
RESIDUAL = (VESSEL DAYS IN PORT) (.60) (1900 GALS/DAY).

* SINCE THE PORTS ARE BY TWO DIFFERENT PARISHES, THE TOTAL FUEL CONSUMPTION ASSIGNED TO EACH PARISH IS APPORTIONED BY THE WIND DIRECTION AND AMOUNT OF SHORELINE MILEAGE.

TABLE C-10. 1976 FUEL USE AND VOC EMISSIONS FOR VESSELS (INPORT)[a]

	INPORT FUEL USE (GALS/YR)		THC EMISSION FACTOR (LB/1000 GAL)			INPORT VOC EMISSIONS (TONS/YR)	
	DISTILLATE	RESIDUAL	DISTILLATE	RESIDUAL	REACTIVITY	DISTILLATE	RESIDUAL
LAKE CHARLES							
CALCASIEU	475,200	2,052,000	3	3.2	0.15	0.1	0.5
BATON ROUGE							
EAST BATON ROUGE	761,310	3,287,760	3	3.2	0.15	0.2	0.8
IBERVILLE	0	0	0	0	0	0	0
JEFFERSON	0	0	0	0	0	0	0
ST. CHARLES	0	0	0	0	0	0	0
ST. JAMES	0	0	0	0	0	0	0
ST. JOHN THE BAPTIST	0	0	0	0	0	0	0
WEST BATON ROUGE	761,310	3,287,760	3	3.2	0.15	0.2	0.8
ASCENSION	0	0	0	0	0	0	0
NEW ORLEANS							
JEFFERSON	1,737,234	7,501,854	3	3.2	.15	0.4	1.8
ORLEANS	4,337,010	18,728,406	3	3.2	.15	1.0	4.5
ST. BERNARD	0	0	0	0	0	0	0

[a] SINCE THERE IS NO VESSEL TRAFFIC IN CADDO AND BOSSIER PARISHES, THESE EMISSIONS ARE FOR PARISHES IN THE SOUTHERN LOUISIANA - S.E. TEXAS AQCR.

TABLE C-11. FUEL USE AND VOC EMISSIONS FOR VESSELS (UNDERWAY)(a)

AREA	MILES OF(b) SHORELINE	FUEL CONSUMPTION (GALS/YR-MI.)	UNDERWAY FUEL USE (GALS/YR)	THC EMISSION FACTOR (LB/1000 GAL)	REACTIVITY FACTOR	UNDERWAY VOC EMISSIONS (TONS/YR)
LAKE CHARLES						
CALCASIEU	16	1.866323×10^5	2.9861168×10^6	50	0.15	11.2
BATON ROUGE						
ASCENSION	16.8	6.4626961×10^5	1.0857329×10^7	50	0.15	40.7
EAST BATON ROUGE	9.6	6.4626961×10^5	6.2041883×10^6	50	0.15	23.3
IBERVILLE	24.2	6.4626961×10^5	1.5639725×10^6	50	0.15	58.6
JEFFERSON	11.2	6.4626961×10^5	7.2382197×10^6	50	0.15	27.1
ST. CHARLES	16	6.4626961×10^5	1.0340314×10^7	50	0.15	38.8
ST. JAMES	22	6.4626961×10^5	1.4217931×10^7	50	0.15	53.3
ST. JOHN THE BAPTIST	12.8	6.4626961×10^5	8.272251×10^6	50	0.15	31.0
WEST BATON ROUGE	11.4	6.4626961×10^5	7.3674736×10^6	50	0.15	27.6
NEW ORLEANS						
JEFFERSON	5.867	7.5699244×10^5	4.4412746×10^6	50	0.15	16.7
ORLEANS	9.267	7.5699244×10^5	7.0150489×10^6	50	0.15	26.3
ST. BERNARD	5.867	7.5699244×10^5	4.4412746×10^6	50	0.15	16.7
JEFFERSON*						43.8

(a) FOR PARISHES IN SOUTHERN LOUISIANA - S.E. TEXAS AQCR.

(b) MILES OF SHORELINE - TOTAL LENGTH OF WATERWAY THAT IS IN OR ADJACENT TO EACH PARISH, AND HAS VESSEL TRAFFIC ON IT.

* THIS IS THE SUM OF THE VOC EMISSIONS IN JEFFERSON PARISH FOR THE TWO PORT AREAS.

TABLE C-12. BOAT REGISTRATIONS AND FUEL CONSUMPTION FOR 1977

DISTRICT OR PARISH	MOTOR BOAT REGISTRATIONS[a]				C	FUEL CONSUMPTION RATES (GALS/HOUR)			FUEL USED (GALS/YEAR)		
	INBOARD		OUTBOARD			INBOARD		OUTBOARD	INBOARD		OUTBOARD
	GASOLINE	DIESEL	GASOLINE	DIESEL		GASOLINE	DIESEL[b]	GASOLINE	GASOLINE	DIESEL	GASOLINE
SOUTHERN LOUISIANA - S.E. TEXAS AQCR											
NEW ORLEANS (DISTRICT)	3,003	3,970	52,575	0	9	3	10	1.5	810,810	3,573,000	7,097,625
BATON ROUGE (DISTRICT)	1,538	1,042	26,921	0	9	3	10	1.5	415,260	937,800	3,634,335
LAKE CHARLES (CALCASIEU)	802	377	14,037	0	9	3	10	1.5	216,540	339,300	1,894,995
ST. MARY	394	417	6,902	0	9	3	10	1.5	106,380	375,300	931,770
LAFAYETTE	387	172	6,776	0	9	3	10	1.5	104,490	154,800	914,760
GRANT	81	31	1,413	0	9	3	10	1.5	21,870	27,900	190,755
POINTE COUPEE	65	48	1,136	0	9	3	10	1.5	17,550	43,200	153,360
BEAUREGARD	102	39	1,783	0	9	3	10	1.5	27,540	35,100	240,705
SHREVEPORT - TEXARKANA - TYLER AQCR											
SHREVEPORT (DISTRICT)	1,063	408	18,610	0	9	3	10	1.5	287,010	367,200	2,512,350

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[a] BOAT REGISTRATIONS WERE OBTAINED FROM THE LOUISIANA STATE GAME AND FISH COMMISSION FOR BOATS UNDER FIVE TONS, AND FROM THE U.S. COAST GUARD FOR BOATS WEIGHING FIVE TONS AND OVER.

[b] THE INBOARD DIESEL FUEL CONSUMPTION RATE (10 GALS/HOUR) WAS OBTAINED FROM LOCAL MARINAS.

TABLE C-13. 1977 VOC EMISSIONS FOR PLEASURE AND SMALL COMMERCIAL BOATS

DISTRICT OR PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
NEW ORLEANS (DISTRICT)		4,180.9
BATON ROUGE (DISTRICT)		2,069.4
LAKE CHARLES (CALCASIEU)		1,067.0
ST. MARY		541.3
LAFAYETTE		514.4
GRANT		106.9
POINTE COUPEE		87.6
BEAUREGARD		134.9
	TOTAL	8,702.4
SHREVEPORT - TEXARKANA - TYLER AQCR		
SHREVEPORT (DISTRICT)		1,408.0
	TOTAL	1,408.0

TABLE C-14. 1977 VOC EMISSIONS FOR VESSELS, PLEASURE, AND SMALL COMMERCIAL BOATS

PARISH		VESSELS (TONS/YEAR)	SMALL CRAFT (TONS/YEAR)	VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR				
ASCENSION		42.7	248.2	290.9
BEAUREGARD		0	134.9	134.9
CALCASIEU		11.9	1,067.0	1,078.9
EAST BATON ROUGE		25.5	1,436.5	1,462.0
GRANT		0	106.9	106.9
IBERVILLE		61.5	179.5	241.0
JEFFERSON		48.1	1,610.8	1,658.9
LAFAYETTE		0	514.4	514.4
LAFOURCHE		0	654.7	654.7
ORLEANS		33.1	931.8	964.9
POINTE COUPEE		0	87.6	87.6
ST. BERNARD		17.4	388.6	406.0
ST. CHARLES		40.7	236.8	277.5
ST. JAMES		56.0	120.6	176.6
ST. JOHN THE BAPTIST		32.5	125.3	157.8
ST. MARY		0	541.3	541.3
WEST BATON ROUGE		30.0	84.8	114.8
	TOTAL	399.4	8,469.7*	8,869.1
SHREVEPORT - TEXARKANA - TYLER AQCR				
BOSSIER		0	364.0	364.0
CADDO		0	1,044.0	1,044.0
	TOTAL	0	1,408.0	1,408.0

TABLE C-15. 1977 FUEL CONSUMPTION AND VOC EMISSIONS FROM RAILROADS

PARISH	FUEL CONSUMPTION (GALS/YEAR)		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR			
ASCENSION	627,778		24.7
BEAUREGARD	2,360,243		93.1
CALCASIEU	2,855,569		112.7
EAST BATON ROUGE*	2,073,702		128.6
GRANT	1,564,718		61.8
IBERVILLE	582,582		23.0
JEFFERSON*	1,372,866		85.1
LAFAYETTE	1,126,292		44.4
LAFOURCHE	1,054,401		41.6
ORLEANS*	2,490,000		154.4
POINTE COUPEE	1,916,166		75.6
ST. BERNARD	1,823		0.1
ST. CHARLES	1,213,098		47.9
ST. JAMES	711,278		28.0
ST. JOHN THE BAPTIST	750,340		29.6
ST. MARY	2,103,653		83.0
WEST BATON ROUGE*	1,144,475		70.9
		TOTAL	1,104.5
SHREVEPORT - TEXARKANA - TYLER AQCR			
BOSSIER	1,758,464		69.4
CADDO*	4,783,852		296.6
		TOTAL	366.0

* THESE PARISHES WERE ASSUMED TO HAVE SIGNIFICANT RAILYARD SWITCHING ACTIVITY.

TABLE C-16. FARM EQUIPMENT EMISSIONS[a]

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		22.6
BEAUREGARD		55.3
CALCASIEU		72.5
EAST BATON ROUGE		43.4
GRANT		23.6
IBERVILLE		39.4
JEFFERSON		2.2
LAFAYETTE		73.8
LAFOURCHE		53.5
ORLEANS		0.0
POINTE COUPEE		59.0
ST. BERNARD		1.9
ST. CHARLES		4.1
ST. JAMES		28.6
ST. JOHN THE BAPTIST		12.3
ST. MARY		35.8
WEST BATON ROUGE		17.5
	TOTAL	545.5
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		34.2
CADDO		57.8
	TOTAL	92.0

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[a] BASED ON DATA AVAILABLE IN "CENSUS OF AGRICULTURE, COUNTY DATA," U.S. DEPARTMENT OF COMMERCE, BUREAU OF THE CENSUS, 1974.

TABLE C-17. CONSTRUCTION EQUIPMENT EMISSIONS [a]

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		0.7
BEAURECARD		0.1
CALCASIEU		3.5
EAST BATON ROUGE		13.8
GRANT		0.0
IBERVILLE		0.7
JEFFERSON		6.8
LAFAYETTE		1.5
LAFOURCHE		0.6
ORLEANS		6.4
POINTE COUPEE		0.1
ST. BERNARD		0.5
ST. CHARLES		0.3
ST. JAMES		0.0
ST. JOHN THE BAPTIST		0.1
ST. MARY		2.0
WEST BATON ROUGE		0.0
	TOTAL	37.1
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		0.9
CADDO		1.3
	TOTAL	2.2

(a) BASED ON FUEL CONSUMPTION FIGURES DERIVED FROM "HIGHWAY STATISTICS," U.S. DEPARTMENT OF TRANSPORTATION, 1975, FHWA-HP-HS-75-01R.

TABLE C-18. INDUSTRIAL EQUIPMENT EMISSIONS [a]

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		29.8
BEAUREGARD		8.7
CALCASIEU		120.1
EAST BATON ROUGE		237.0
GRANT		2.0
IBERVILLE		29.2
JEFFERSON		322.0
LAFAYETTE		90.3
LAFOURCHE		37.6
ORLEANS		408.5
POINTE COUPEE		4.3
ST. BERNARD		37.3
ST. CHARLES		33.8
ST. JAMES		26.0
ST. JOHN THE BAPTIST		17.5
ST. MARY		14.5
WEST BATON ROUGE		10.1
	TOTAL	1428.7
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		29.6
CADDO		246.1
	TOTAL	275.7

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[a] BASED ON FUEL CONSUMPTION FIGURES TAKEN FROM "LOUISIANA ENERGY PRODUCTION AND CONSUMPTION, 1976 UPDATE," LOUISIANA DEPARTMENT OF NATURAL RESOURCES, AUGUST, 1977.

TABLE C-19. LAWN AND GARDEN EQUIPMENT EMISSIONS (a)

PARISH		VOC EMISSIONS (TONS/YEAR)
SOUTHERN LOUISIANA - S.E. TEXAS AQCR		
ASCENSION		13.5
BEAUREGARD		9.1
CALCASIEU		54.5
EAST BATON ROUGE		98.4
GRANT		6.0
IBERVILLE		9.5
JEFFERSON		120.4
LAFAYETTE		37.6
LAFOURCHE		23.2
ORLEANS		133.9
POINTE COUPEE		6.4
ST. BERNARD		19.5
ST. CHARLES		10.7
ST. JAMES		6.1
ST. JOHN THE BAPTIST		7.9
ST. MARY		18.2
WEST BATON ROUGE		5.3
	TOTAL	580.2
SHREVEPORT - TEXARKANA - TYLER AQCR		
BOSSIER		21.5
CADDO		86.5
	TOTAL	108.0

(a) BASED ON HOUSING INFORMATION TAKEN FROM "LOUISIANA ALMANAC, 1975-1976," PELICAN PUBLISHING COMPANY, 1975.

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